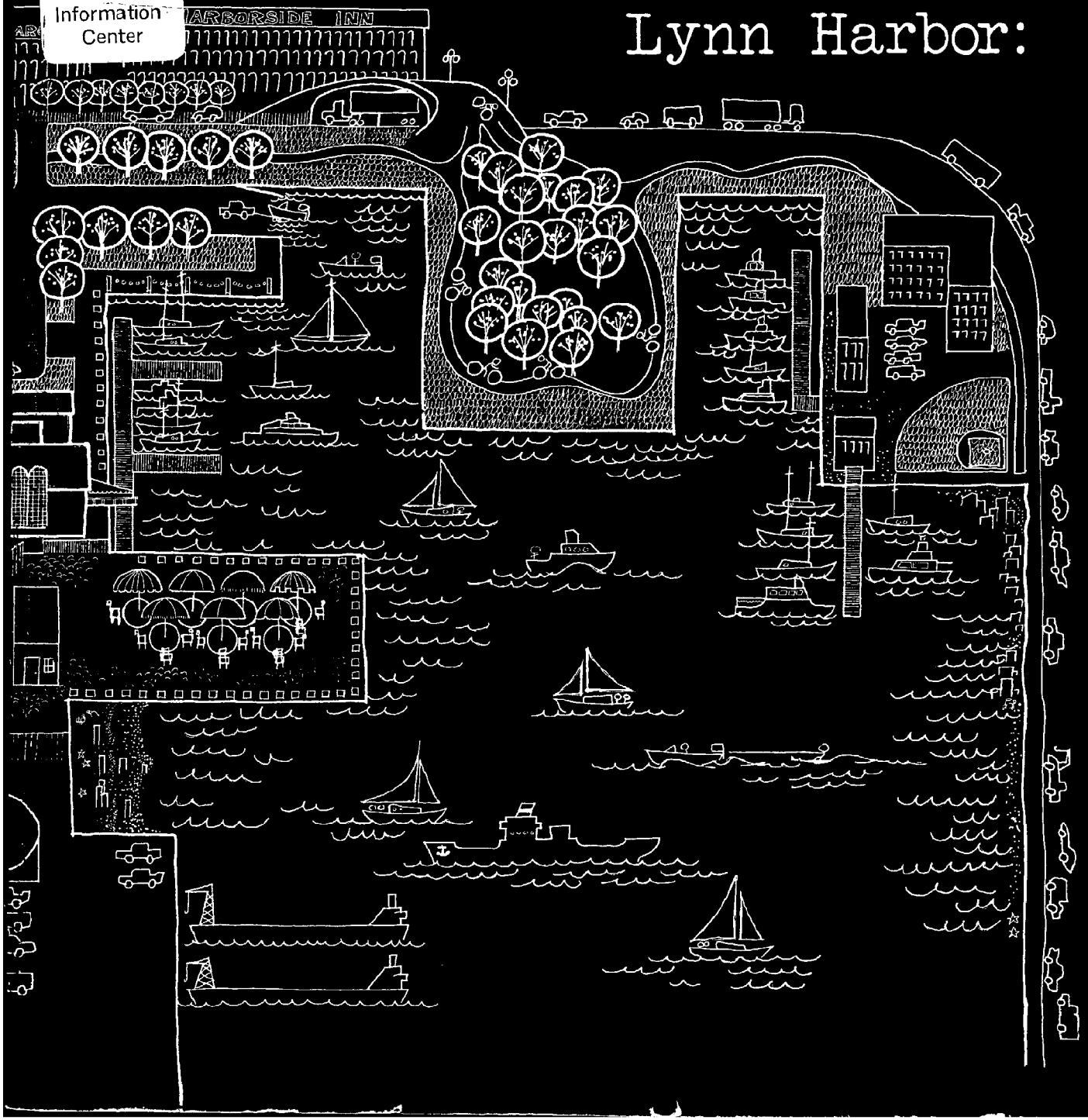

Lynn Harbor: Planning For Coastal Development

Edited by

Lisa T. Rosenbaum

M.I.T.
SEA
GRANT
PROGRAM

Lynn Harbor:
Planning For Coastal Development

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Planning For Coastal Development

U.S. DEPARTMENT OF COMMERCE NOAA
COASTAL SERVICES CENTER
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A Report Based on
Interdepartmental Student Projects
In Systems Engineering at the
Massachusetts Institute of Technology

Edited by Lisa Rosenbaum

With a Foreword by William W. Seifert

M.I.T. Sea Grant Program
Massachusetts Institute of Technology
Cambridge, Massachusetts

This report describes the results of research done as part of the M.I.T. Sea Grant Program with support from the Office of Sea Grant in the National Oceanic and Atmospheric Administration, United States Department of Ccmmerce, through grant number 04-6-158-44081, and from the Massachusetts Institute of Technology. The United States government is authorized to produce and distribute reprints for governmental purposes notwithstanding any copyright notation that may appear hereon.

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May 1978
Massachusetts Institute of Technology
Cambridge, Massachusetts 02139

Foreword

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McPherson, Roy Nick, ed., Gloucester Resource Study. MITSG 74-3, Cambridge: Massachusetts Institute of Technolcgy, November 1973, 179 pp. $5.00.

Engellenner, Thomas, Fred Curtis, and William Seifert, eds., The Boston South Shore Area: Some Problems and Conflicts. MITSG 75-23. Cambridge: Massachusetts Institute of Technology, August 1975. 175 pp. $5.00

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Foreword

This volume continues the practice of making available the results of an M.I.T. design subject, "Special Studies in Systems Engineering." Each year, students are drawn from different departments at M.I.T. and often from other universities as well. The students explore a topic of current interest and because the effort receives support under a grant from the Sea Grant Program of the National Oceanic Atmospheric Administration, a coastal related topic is sought.

Lynn Harbor presented an interesting challenge; the formulation of development policy and options for an underused urban waterfront. From January 1976 through June 1977 student work was conducted in Lynn. The students involved are listed here.

Carl F. Cerco	Department of Civil Engineering, M.I.T., S.M. program
William E. Critch	Department of Ocean Engineering, M.I.T., Undergraduate
Charles A. Kubat	Department of Urban Planning, M.I.T., M.C.P. program
J. Clifford Leisinger	Department of Landscape Architecture, HGSD, M.I.A. in Urban Design program
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Michael J. Saylor — Department of Ocean Engineering, M.I.T., Undergraduate
Lisa T. Rosenbaum — Department of Architecture, M.I.T., Undergraduate
John W. Stetkar — Department of Nuclear Engineering, M.I.T., S.M. program

During the spring semesters of 1976 and 1977, students enrolled in the design subject worked with members of the Lynn Planning Board, Department of Community Development and Lynn Port Authority. Charles Kubat elected to write about Lynn Harbor for his master's thesis for the Department of Urban Planning at M.I.T., and was involved in the project from June 1976 through June 1977. In addition to his thesis work, which is a major part of this volume, he and Norman Oliver authored several preliminary reports and working papers during the summer of 1976. These were given to the Lynn departments listed above, and were also used by the students in the Spring 1977 semester as a point of departure for their research.

The students presented their work orally in Lynn at various intervals with a final meeting to the Lynn City Council and interested citizens on June 9, 1977. This volume represents the compilation of all the work carried out in Lynn. Additional research and preparation of this final version are the efforts of Lisa Rosenbaum. Special thanks are due Elizabeth A. Howell for her meticulous effort with the typing of the manuscript.

The city of Lynn supported this work both financially and by the time donated by key city personnel. The aid of A. Linda Benson of the Port Authority, William McInerney of the Department of Community Development, and Kevin Geaney of the Planning Department is gratefully acknowledged.

The production of this manuscript was supported by the National Oceanic Atmospheric Administration of Sea Grant, grant number 04-6-158-44081, project element 1976-1977, the City of Lynn, Massachusetts, Development Analysis Associates, Inc., and the Massachusetts Institute of Technology.

William W. Seifert
Department of Civil Engineering
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June 1978

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1

Introduction

Introduction

This volume describes one of a series of studies made by a group of faculty and students at the Massachusetts Institute of Technology under the auspices of the National Oceanic Atmospheric Administration of Sea Grant. The study of Lynn Harbor was begun in January 1976 and completed in June 1977. The report summarizes the information collected, analyzes it, assesses development potential, and makes policy proposals for harbor development.

The material presented here will be of interest to two audiences. First, to the citizens of Lynn for immediate use in current planning and development schemes; and second, to those interested in the generic problems of planning in coastal urban areas. The problems that Lynn faces, while serious, are not unique. They are shared by other declining harbor cities. Much of the material here may be extrapolated to fit a variety of circumstances which are common to Lynn and to other cities.

Urban waterfronts are in a constant state of transition. Changes in land uses, land values, economic demand, transportation modes, industrial technologies, and public values and desires all contribute to the evolution of the waterfront. The challenge is not how to prevent or enforce change but how to manage it in a manner which makes best use of both natural and manmade waterfront resources to accommodate the diverse and evolving needs of the community.

2 Introduction

An approach for optimizing development cannot be stated simply. No single public policy will provide the solution to all the problems that exist. Similarly, no one group can cope with all the complex issues involved; cooperation among local organizations and government as well as with other levels of government is necessary. Further, no one land use is adequate for the entire waterfront. A balanced land use package incorporating industry, port facilities, recreational, commercial, and residential uses can most advantageously exploit the diverse characteristics of the waterfront.[1]

LYNN AND THE HARBOR STUDY AT A GLANCE

Population Losses:

1950	99,000
1960	95,000
1970	90,000
1977	80,000

Lynn, once a thriving center for North Shore commerce, industry, and residence, is suffering from a combination of problems: a loss of population; a loss of jobs and a narrowing of opportunities in the jobs that remain; a shrinking economic base; a loss of retail sales; and a deterioration of physical structures.

Employment Losses:

1950-1970	350 jobs/year
1972-1973	700 jobs/year
1974-1976	250 jobs/year

With a population of approximately 80,000 people in 1977, Lynn is the second largest city on the Massachusetts coast. Despite its problems, it remains a competitive manufacturing center. Fifty-five percent of the workforce is engaged in manufacturing with total payrolls exceeding those of comparably sized cities. In 1973, Lynn actually had more jobs than available workers--37,000 jobs for 36,000 workers.

However, since 1950, the population of Lynn has been decreasing: from approximately 99,000 in 1950 to 95,000 in 1960 to its present level. And predictably, those losses have been among the more employable and financially stable residents of Lynn, especially families with young children. The city has, as a result, twice as many people on public

[1] Skidmore Owings and Merrill, Boston, Mass., Southeastern New England Study of Water and Related Land Resources, Urban Waters Special Study, New England River Basins Commission, January, 1975, pp. 139.

assistance as the state average. In 1973, Lynn's unemployment rate was almost twice the national average, 8.2 percent in Lynn, 4.5 percent nationwide. In 1977, the latest year for which figures are available, the unemployment rate in Lynn was 9.4 percent, and 7.0 percent nationwide.[2]

In addition, Lynn is also presently losing approximately 400 manufacturing jobs each year. The loss of population, then, the shrinkage of the economic base, and the continual loss of jobs have all, in turn, contributed to declines in the associated retail and wholesale trade sectors, declines that have themselves been further compounded by the increased competition of regional shopping centers.

A strong community desire exists, however, to find a way to halt this decline and to reestablish Lynn as a desirable place in which to live and to do business. One obvious direction for such a revitalization to take would be to encourage the fuller use of Lynn's natural and manmade resources. And the harbor, even in its abandoned state, is one of the most promising resources Lynn possesses.

Currently, the harbor and attendant commercial area are in states of disrepair. The harbor is not used by business or industry, and the waterfront district offers very little inducement to investors. Although it is an unmistakable physical backdrop for the city, the harbor does not add to the positive public image of Lynn nor to the ambience of the nearby downtown area. It is cut-off, physically, from the center of the city by the Lynnway and, through long neglect, cut-off spiritually from the on-going life of the city. Therefore, to make better use of the harbor as a priceless resource--to begin the process of revitalizing Lynn--change is necessary. This volume formulates options for Lynn to help the city redevelop and manage the harbor so it can become an asset to the community. The options take several

[2]Massachusetts Division of Employment Security, Labor Area Division.

forms. They range from the creation of a special harbor district; to the investigation of ideas for new uses, such as building a marina; to exploitation of the benefits of federal programs such as the Coastal Zone Management Act; to the synthesis of a set of land use and development policies for future harbor growth. These options are based on an understanding of historical, regional, economic, and governmental factors, and on an analysis of present harbor characteristics. Fundamental to the study and cited throughout it are the attitudes and objectives of the community.

The first four chapters of the study focus on background factors: Lynn's self-appraisal, its attitudes and goals; the physical conditions of the harbor, present uses, zoning, utility and highway systems; the harbor's role in Lynn as a whole, the city's employment situation and needs, tax base and assessment policies; and, finally, Lynn's present and future roles in the entire North Shore region. Chapter Five contains an analysis of the potential impact on Lynn of the new 200 mile territorial limit and offshore oil development. These two issues--of enormous interest to all coastal New England--are discussed here in terms of what market prospects they might or might not offer Lynn Harbor.

Chapter Six assesses the potential for growth of the harbor. It includes a list of Lynn's own criteria of their needs and objectives and examines how certain waterfront businesses, industries and other activities measure up against those criteria, and what prospect Lynn has of attracting them. The chapter concludes with a table of activities that summarizes the findings.

Chapter Seven addresses the inextricable connection between city policy and implementation. No policy, no matter how

attractive, stands much of a chance of success if considered in isolation of possible means to implement it. This chapter defines what a city policy is, then what particular shape Lynn's policy might take, and includes seven broad recommendations for the successful implementation of that policy.

Chapter Eight is a presentation of 21 specific suggestions for Lynn Harbor policy and methods to implement each. The suggestions are organized under the categories of process of change, infrastructure, land side and water side activities, waterfront ambience, and movement to and from and within the harbor area.

Chapter Nine is a discussion of the possible ramifications of Massachusetts Coastal Zone Management program (CZM). CZM, instituted under the federal Coastal Zone Management Act, and as yet unformulated, may or may not have a significant impact on Lynn; but, as presented here, the discussion centers on the origins of coastal zone management concepts and statutes; the general policies of the Massachusetts Office of Coastal Zone Management that already have specific implications for Lynn; and, finally, an analysis of the benefits inherent in the two possible designations Lynn might adopt for its harbor--port or developed harbor.

Chapter Ten is a preliminary study of the possibility of establishing a marina in Lynn Harbor. The study, conducted at the specific request of Lynn city planners, undertakes to research the market demand and financial base for a marina, the recreational and economic services such a project might render the community, the cost of preparing the harbor, and suggested design for onshore and offshore facilities.

The study concludes with a chapter of conclusions that are then translated into a suggested work program to initiate some of the tasks necessary to begin harbor improvements. The material presented in this volume takes the reader past the initial point of information gathering. Specific suggestions, based on analyses of the collected information, are advanced and underpinned with specific methods to implement them. In the interests of keeping the text as brief and readable as possible, only those statistics germane tc the assessment of the recommendations have been included within the chapters. Readers who wish more basic statistics about Lynn are directed to the appendices and the numerous sources listed in the bibliography.

THE HISTORICAL SETTING

The city cf Lynn was originally settled in 1629, nine years after the Pilgrims landed at Plymouth. In 1631 Lynn was incorporated as a town; and in 1850, as a city.

In 1634, the first iron smelting plant in America was started in Lynn, and 1635 saw the beginning of the shoe manufacturing industry which ultimately grew tc make Lynn the nation's leading shoe producer by the late 19th century. Other industries, such as General Electric, also moved to Lynn in the late 19th century, locating on a waterfront accessible by coal barge.

Over the years, mainly to facilitate the shipment of coal, which was the major energy source, both the Saugus River (western channel) and the main eastern, Lynn Channel were dredged. The Lynn Channel was dredged first to a depth of 10 feet and a width of 200 feet, then to a depth of 15 feet and a width of 300 feet, and, finally, in 1934, to a depth

of 22 feet with an accompanying turning basin, 550 feet wide. Congress authorized a depth of 25 feet in 1935 and enlargements to the turning basin in 1954, but these improvements were not completed because complementary locally-financed improvements were not made. The continuing channel improvements were justified by the eight coal piers served in 1900; the thirteen open pile piers and wharfs at the head of the harbor (for coal, coke, fish, lobster, lumber, and miscellaneous goods); and the two Lynn Gas and Electric Company wharfs for coal and oil receipt, which were in place in 1940. Lynn Harbor was used to ship or receive 478,000 tons of coal, lumber, sand, oil, and other raw materials in 1911, and 310,500 tons in 1945.[3]

Changes in technology and regional economics in the early twentieth century contributed to the movement of the major part of the shoe industry from Lynn, hence enervating the most important economic base of the harbor. Lynn factories and wharfs had no rail spur access, and other manufacturing towns could be served more economically by railroad and later by truck than Lynn could be by barges. Moreover, the change in energy use from coal to oil and electricity further reduced the importance of the harbor.

In 1934, the Lynn Port Authority (LPA) was created to sell and lease land for heavy industrial use, make regulations for this land and enforce them, and plan for future development. The land under the control of the LPA was sold without a cohesive plan for harbor development, and in spite of the fact that the land was zoned for heavy industrial use, the city failed to attract large factory industries to settle in the area. Increasing dependence on automobile and truck transportation spurred the construction of the Lynnway in the mid-1950s which led to a rash of low density commercial strip development. The Lynnway uses were not water related and contributed nothing positive to the ambience of

[3]U.S. Congress, House of Representatives, U.S. Army Corps of Engineers report on Lynn Harbor, 81st Congress, Session 2, Document Number 568, pp. 11-13.

the waterfront. They, in fact, isolated the waterfront from the more active residential and commercial center of the city and made it possible for the city to ignore its underused harbor.

The changes since 1934 have contributed to the present reduced commercial and industrial use of the harbor. The major harbor activity today is sport fishing and recreational boating. Except for an occasional sea barge shipment by General Electric, almost no commercial use is made of the harbor resource.

2

Lynn's Self-appraisal

Lynn's Self-appraisal

How a community appraises itself and assesses its needs and objectives are fundamental to analysis and public policy formation. The attitudes of Lynn residents and city employees were evaluated, and from these evaluations a community profile and a set of community objectives were assembled. The following statements attempt to accurately reflect community concerns and desires for harbor development.

COMMUNITY ATTITUDES

One source of information about community attitudes and concerns is the "Local Growth Policy Statement" prepared by Lynn's Local Citizen Committee in 1976 under the Massachusetts Growth Policy Development Act. The following conclusions about community concern for development are drawn from this statement.[1]

First, the Committee believes Lynn's commercial base has been eroding primarily because of "...lack of access, changes in labor mobility, deterioration of community image, lack of physical resources, i.e., buildings and land..." and severe competition from other development in the region.

Second, frustration over the negative effects of continued deterioration and disinvestment and the large quantity of low income housing on the regional image of the city; the

[1]City of Lynn, Lynn Growth Policy Committee, Local Growth Policy Statement, 1976.

lack of success of a "fragmented planning process"; community stagnation; the lack of local, state and federal investment in the city; and ineffectivenss of state economic development policies to benefit Lynn.

Third, the Committee feels Lynn's major problems to be hierarchically as follows: the shrinkage of the tax base, the loss of jobs, the lack of access, a declining image, an ineffective government, and the physical detericration of the housing stock. Lynn's major assets include "the ocean shore, proximity to Boston and Logan Airport, Lynn Woods, the labor force, citizens and the water supply."

Fourth, the community has high expectations that the extension of the MBTA Blue Line to Lynn and improved highway access (the Revere Beach connector), will result in reinvestment in the city, increased employment opportunities, and stimulated housing and commercial activity. In order to improve its population mix, the community desires residential development in the middle to upper income range.

And fifth, the community considers the harbor an area of critical planning concern because of the potential impact of local development on Nahant and Revere. Harbor redevelopment is also seen as part of a larger need to achieve "a complete revision of existing land use policies."[2]

COMMUNITY OBJECTIVES

First, Lynn recognizes that the economic and transportation changes of the past three decades have altered the commercial uses made of the harbor and lowered their intensity. At present the harbor is used for recreational activities

[2]City of Lynn, Lynn Growth Policy Committee, Local Growth Policy Statement, 1976.

and nonwater oriented commercial or industrial activities. However, the city is also aware that the harbor area, with its vacant and underutilized land, its channel and its visual qualities, offers the opportunity to attract new employers and new residents to Lynn and to fashion a new image for the city. Therefore, the first and broadest community objective for harbor development is to capitalize on the physical properties and the commercial and visual potential of the harbor to stimulate the local economy and to revitalize the harbor environment.

Community Objective 1

Second, the city understands that numerous changes in manufacturing industries, the commercial market, energy and transportation costs, and federal pclicies have caused a steady movement of manufacturing industries from New England, and eroded the property tax and employment base of Lynn and cities like it. Furthermore, if employers in new industries and other activities which require the skills of Lynn residents do not immigrate to the city in sufficient numbers, then residents will seek employment, and often living acccmmodations, elsewhere. These changes have already resulted in a loss of population which has aggravated the problems of the downtown business-retail merchants who are trying to hold their own, of apartment managers who are trying to keep their stock rented and financially viable, and of the remaining residents who are bearing the increased property tax cost with fewer businesses and buildings to share the burden. Therefore, the second community objective is to develop the harbor area to increase the net revenue to the city from property tax income.

Community Cbjective 2

Third, the city realizes that the loss of business and industry has made the working population more dependent upon fewer sources of local employment and has created a difficult unemployment problem. An increase in employment

Community Cbjective 3

opportunities would help strengthen the community in the following ways: curtail population losses; increase demand to maintain the existing quality school system; increase the utilization of the existing housing stock; and more broadly distribute the tax burden. Therefore, the third community objective for harbor development is to create permanent and varied employment opportunities for the city's existing residents (employed, unemployed, and underemployed) and to create opportunities which will attract new residents. In addition, development should create diverse local sources of employment to provide greater variety of opportunity, less dependence upon any one employer, and greater workforce stability over time.

Community Objective 4

Fourth, the city believes that, although physical and economic development of the harbor by private interests is important, public interest in the harbor must also be developed and protected. Furthermore, when considering air or water pollution that exists or might result from new development, or when considering housing and job opportunities, the public must be understood to include all those living in the North Shore region. Considered from a local standpoint, Lynn residents are most interested in the harbor in order to glimpse the water and its activity while traveling adjacent to it; to gain access to the water's edge without trespassing on private property for active and passive recreation; and to be insured that the benefits of harbor development will not be restricted only to directly adjacent property owners but spread as far inland as possible in order to stimulate and support city-wide revitalization. Therefore, the fourth policy objective is to maintain and increase, for the public, visual and physical public access to the harbor.

3

The Harbor Today

The Harbor Today

Lynn Harbor, a natural harbor, lies northeast of Boston, ten miles by land and fourteen miles by sea. It is three miles long north and south and one and a half miles wide east and west. A large part of it is tidal flats exposed at low water. Nahant protects the harbor from east and southeast storms, and the mainland protects it from southwest, west, northwest, and northeast storms.

There are three principal channels in Lynn Harbor: the western channel into the Saugus River, 12 feet deep; the main Lynn federal channel on the east into the inner harbor federal basin, approximately 19 to 22 feet deep; and the municipal channel, from the turning basin westerly to the gas and electric company, 22 feet deep, and beyond along the filled New England Power Company property approximately 2,000 feet, 12 to 15 feet deep. The U.S. Army Corps of Engineers has recently prepared an updated survey of these channels.[1] Vessels having a 7,000 ton capacity, with drafts up to 26 feet, and length up to 375 feet, have used the main channel without navigational difficulties. The mean and spring range of tide is 9 and 10.5 feet, respectively. There is an anchorage basin for yachts approximately 200 yards by 400 yards and eight feet deep east of the turning basin, that contains municipal moorings for 200 boats, supervised by the Lynn Harbormaster.

The area of the harbor chosen as the focus for analysis and development strategy is all upland area between high water

[1]U.S. Army Corps of Engineers, Waltham, Mass., Condition Survey, October 1976.

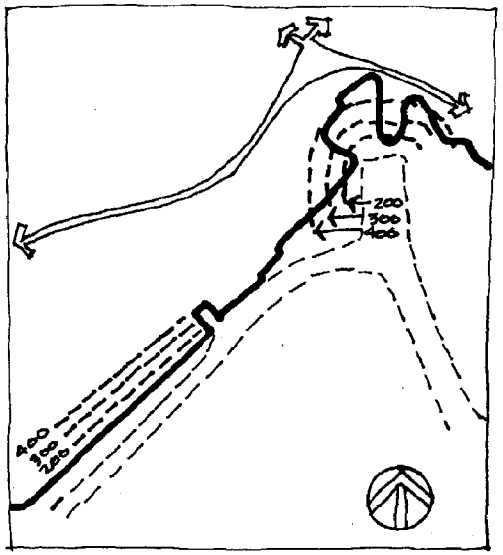
and the Lynnway, from the General Edwards Bridge (over the Saugus River) north and east to the Nahant line. Also included are all tidal flats and bottom areas from high water to the Lynn-Nahant boundary line in the middle of the harbor. This study area has been selected because of its potential for development and because it roughly corresponds to the area that is part of the future state coastal zone. Of the 7,671,113 square feet (175.9 acres) included in the study area, the city of Lynn owns 760,158 square feet (10 percent) which comprises the sewage pumping station and Department of Public Works garage tract, the public landing tract, and several small unusable parcels along the edge of the Lynnway. These parcels are said to be unusable because they have no frontage directly adjacent to the harbor.

The remaining 90 percent of the land is privately owned. Of the 1,937,760 square feet (44.5 acres) of tidal flats on the land side of the Massachusetts Harbor and Land Commissioners line, the city owns 115,398 square feet (6 percent). The remaining land is privately owned and lies primarily within the federal turning basin and yacht mooring basin areas. Between the harbor and the Land Commissioners' line and the Lynn-Nahant town line in the middle of the harbor lies another approximately 10,775,000 square feet (247 acres) of tidal flats and bottom area. This land is owned by the Commonwealth but available to the city through gift, purchase, or eminent domain at any time for the purpose of abating sewage nuisance or improving the harbor.[2]

The following series of maps and tables illustrates the existing land use, water areas, image, zoning, filled areas, ownership, potential for change, and utility systems of the harbor. The means to develop a community-wide perception and appreciation of the harbor--discovering and enhancing what is recognizably singular to the area--must proceed from a thorough description of the harbor's present condition.

[2]MGLA, Section 4, Chapter 606, Acts of 1910.

Similarly, in order to fashion a concerted direction for desired change and to know how to evaluate specific individual development projects, a thorough understanding must be had of the existing harbor.



EXISTING LAND USE

The quantity of commercial land listed in Table 3-1 is deceptive because fully 95 percent of the amount tabulated is related to the Lynnway not to the harbor. This means at present the harbor has almost no commercial uses relating to it.

The quantity of vacant shoreline listed in Table 3-2 is significant. To illustrate the potential for developing water-related uses on the vacant shoreline the following observations can be drawn from the land use map and Tables 3-1 and 3-2.[3] These figures are based on different distances from a dredged channel or turning basin are shown here:

	Within 200 feet	Within 300 feet	Within 400 feet
Vacant land area included	1.6 acres	6.1 acres	12.9 acres
Percentage of total vacant land	4%	15%	31%
Vacant shoreline included	950 lin. feet	3,200 lin. feet	3,700 lin. feet
Percentage of total vacant shoreline	18%	62%	71%

[3]The information in Tables 3-1 and 3-2 was gathered during a field survey conducted in the fall of 1976.

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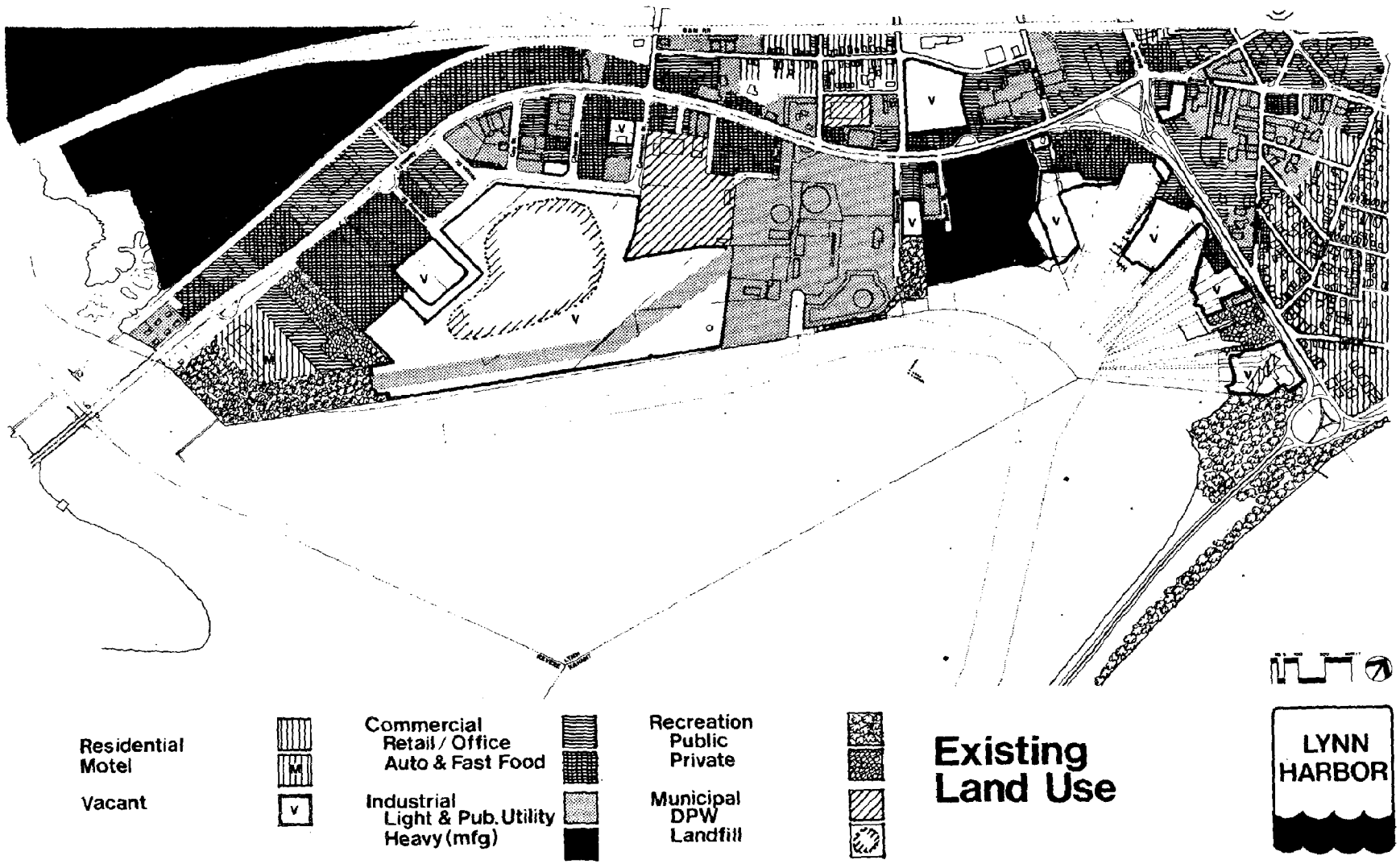
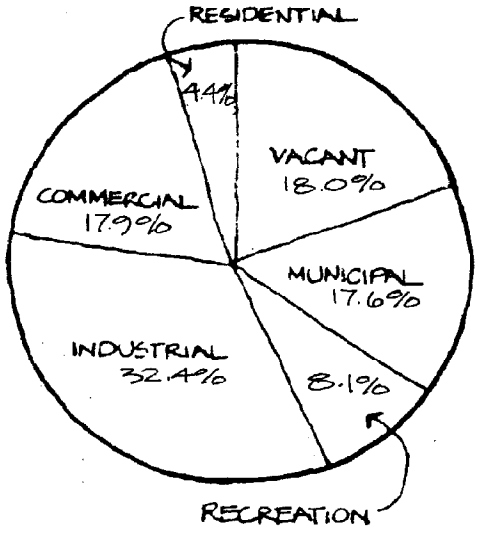


TABLE 3-1
HARBOR LAND USE BY LAND AREA - WATER EDGE TO THE LYNNWAY

	Square Feet	Acres		Percentage of Total
Residential				4.4%
Multifamily (under construction)	204,707	4.70	2.0%	
Motel	241,998	5.55	2.4%	
Commercial				17.9%
Retail/office	313,707	7.20	3.1%	
Auto sales/service	1,447,076	33.22	14.4%	
Fast food restaurant	39,799	.91	.4%	
Industrial				32.4%
Light (public utility)	2,257,049	51.81	22.4%	
Other	452,751	10.39	4.5%	
Heavy (mfg., metal extraction)	733,499	16.84	7.3%	
Recreation				8.1%
Public	542,410	12.45	5.4%	
Private (yacht clubs and marina)	118,082	2.71	1.2%	
Other	147,157	3.38	1.5%	
Municipal				17.6%
Dept. of Public Works	590,408	13.55	5.9%	
Solid waste (landfill)	1,175,700	26.99	11.7%	
Vacant	1,815,070	41.67	18.0%	18.0%
Total	10,079,413	231.39		



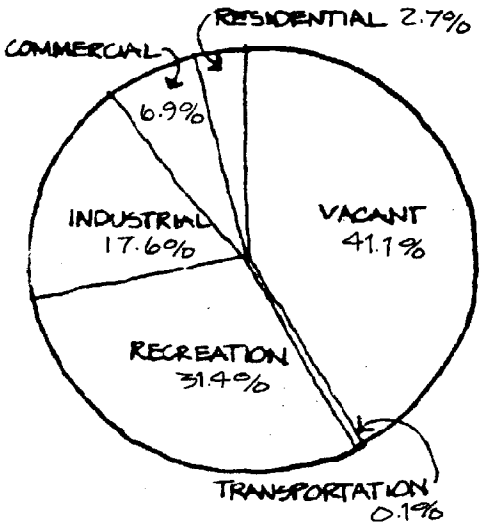


TABLE 3-2
HARBOR LAND USE BY PERCENTAGE OF SHORELINE IN EACH USE
(General Edwards Bridge to the Nahant City Circle Boundary)

Approximate linear feet: 12,700

Residential		2.7%
Multifamily (under construction)	2.7%	
Commercial		6.9%
Retail/office	0	
Auto sales/service	6.9%	
Fast food restaurant	0	
Industrial		17.6%
Light	10.8%	
Heavy	6.8%	
Recreation		31.4%
public (public landing and Electric Company Park)	23.0%	
Private (yacht clubs and marina)	8.4%	
Transportation		.1%
Vacant		41.1%

WATER AREAS AND WATER-ORIENTED FACILITIES

Remarkably, the main federal channel and turning basin have retained most of their originally dredged depth of 22 feet without maintenance by the Army Corps of Engineers.

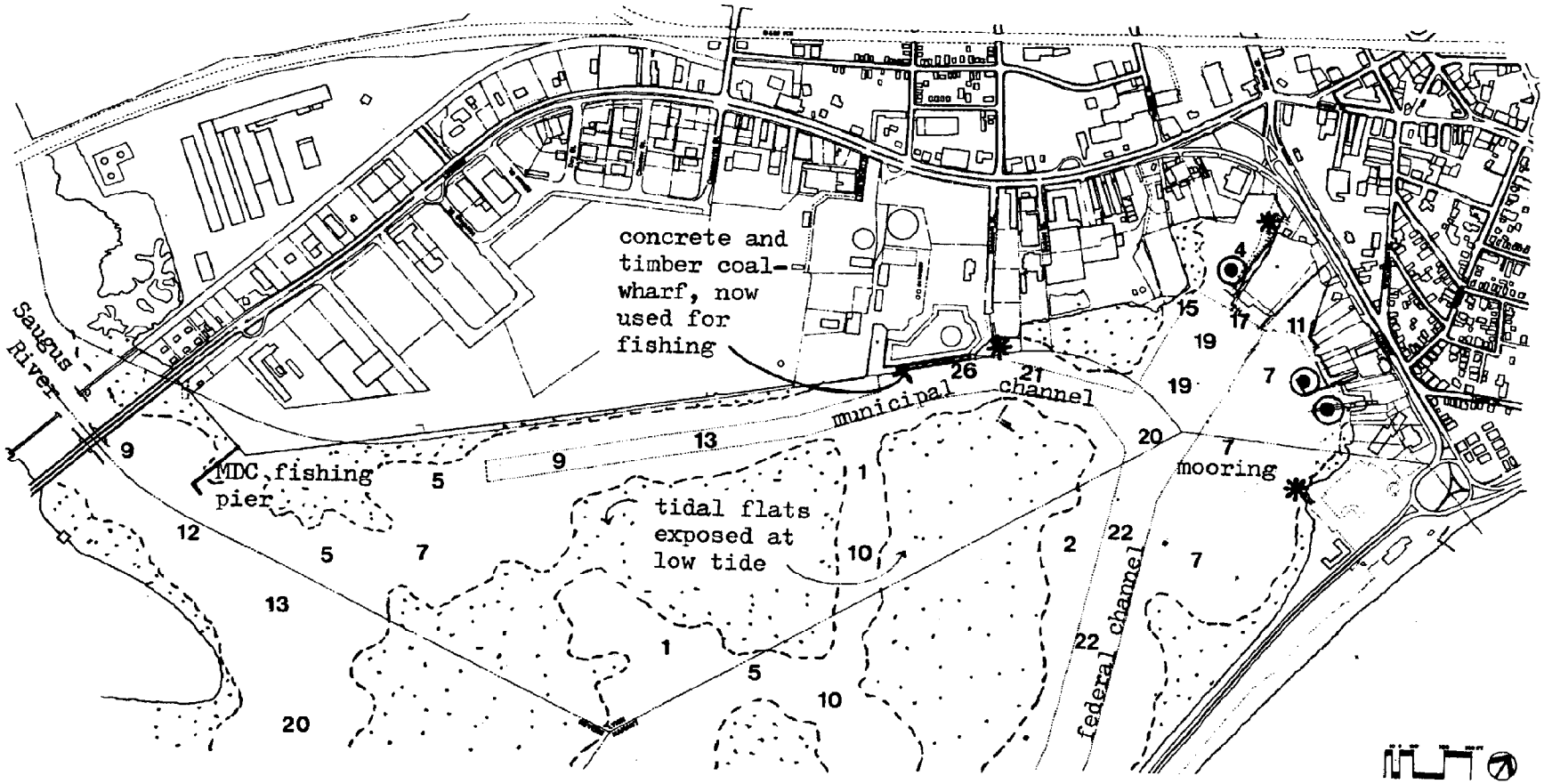
Most water in the inner harbor (and some of the navigable turning basin) which is four to seven or more feet deep is used for boat mooring. Such a limited maneuvering space as well as the depth and width of the federal channel makes it difficult for sailboats to maneuver in easily, and has resulted in a preponderance of power boats in the harbor. To encourage greater sailing activity (sailing has great visual image potential) larger areas of the center of the harbor would need dredging.

EXISTING IMAGE

The harbor image is the analysis of, and conclusions about, the visual aspects of the harbor area that affect the way that people perceive it. The analysis of Lynn's existing image could be expanded to include the image held by different Lynn residents (boat owners, downtown businessmen, Sagamore Hill residents, the city council, etc.) and by people outside of Lynn (commuters who travel the Lynnway, boat users in other communities, etc.). Such an analysis could prove useful for isolating the commonly held key elements of image so that improvements can be concentrated upon them.

Most shoreline areas, including boat docks, are either hidden from view or visible from such a great distance as to lose all detailed character. Increasing the vantage points

20 The Harbor Today



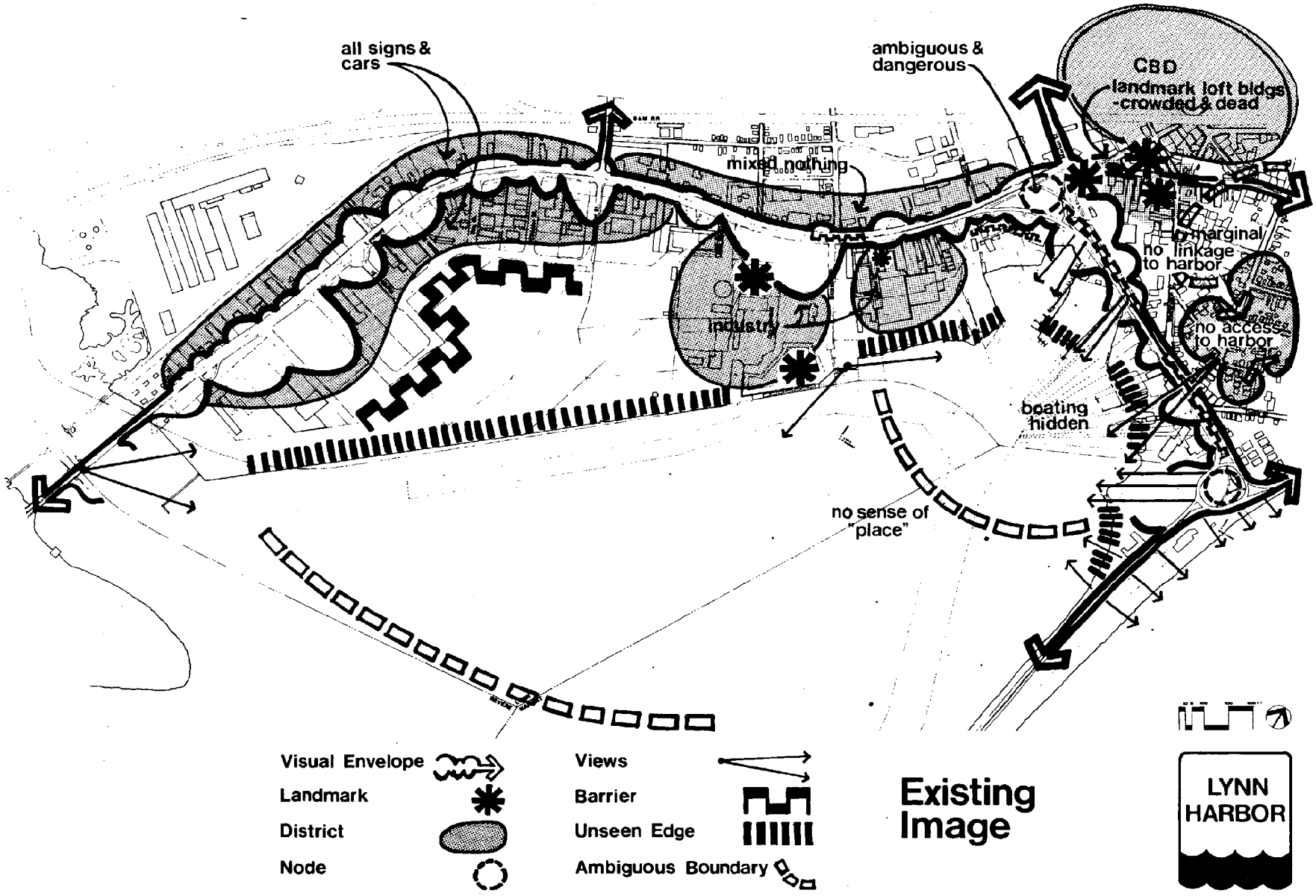
Water depths shown in feet at mean low water
Mean tide range is 9.0 feet
Spring tide range is 10.5 feet

Boat ramp ✱

Boat slips ◉

Water Areas

LYNN HARBOR



Existing Image

LYNN HARBOR

from which the shoreline can be viewed, especially from the water toward the land, can help make the harbor more visually interesting.

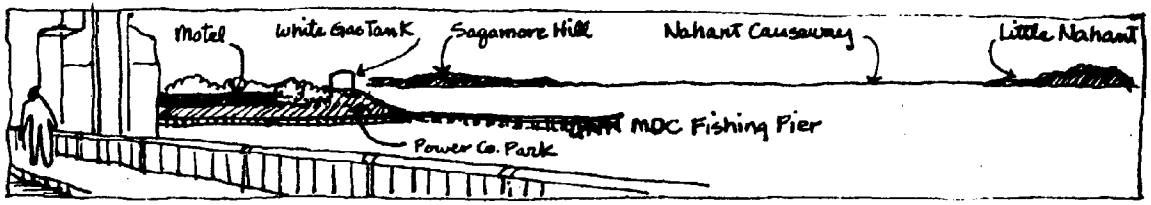
To most Lynn residents as well as to outsiders, the harbor is not now a memorable "place". One of the reasons for this lack is the physical shape of the harbor. Its splayed "U" shape is so open-ended that there is no definition of "here" and "there", especially when viewed from the north end of the harbor.

The existing landmarks (gas tanks, Norelco clock tower and shoe loft buildings) offer potential for a more positive identification of the harbor area.

EXISTING ZONING

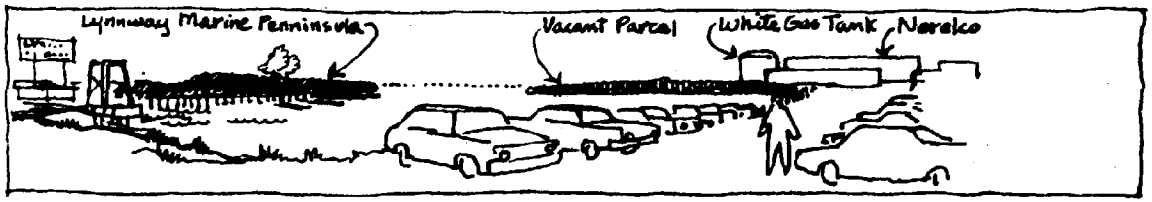
The harbor area is generally thought of as an industrial district, but one not especially water related. And, as little advantage is taken of the harbor, similarly little thought is given to exploiting the spill-over effects that would result from waterfront redevelopment. Zoning alone has not effectively stimulated the previously desired greater industrial development, as can be seen by the 65.8 percent of the district (Lynnway to the shoreline) now being used for activities other than industrial.

In the north harbor area, land adjacent to the central business district (CBD) and the residential area of Sagamore Hill is zoned industrial. Increased industrial development between the CBD and the waterfront could further separate, or curtain off, the two districts and weaken whatever salutary effects revitalization that one might have on the other.

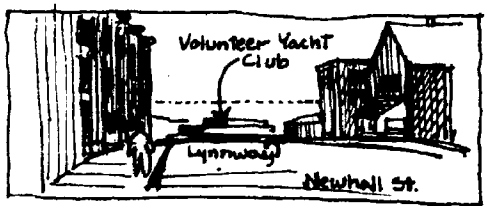


1 From the center of the General Edwards Bridge

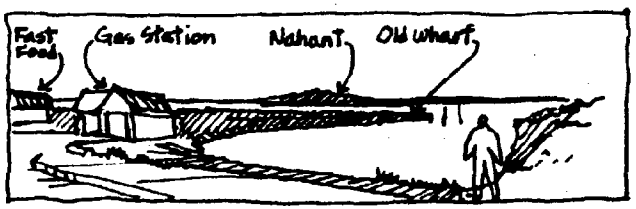
2 From the public landing on Blossom Street (at low tide)



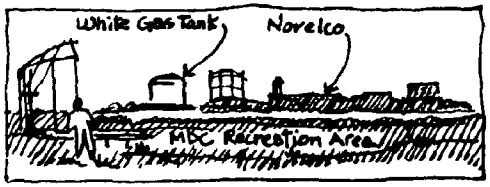
3 From the Lynnway between Beacon Cheverolet and Lynnway Marine



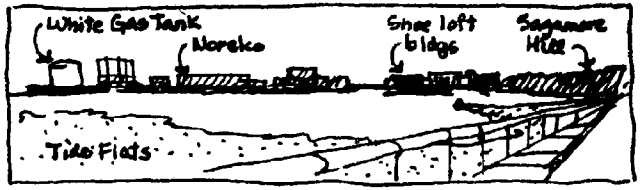
4 From the top of Newhall St.



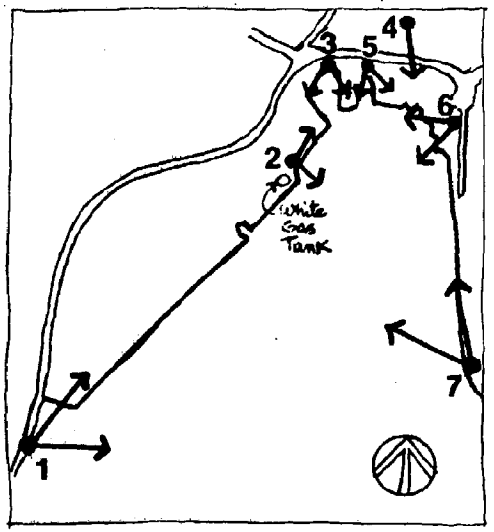
5 From the Lynnway east of Bill & Bob's



6 From the Nahant Circle



7 From the Nahant Causeway



Public View Locations

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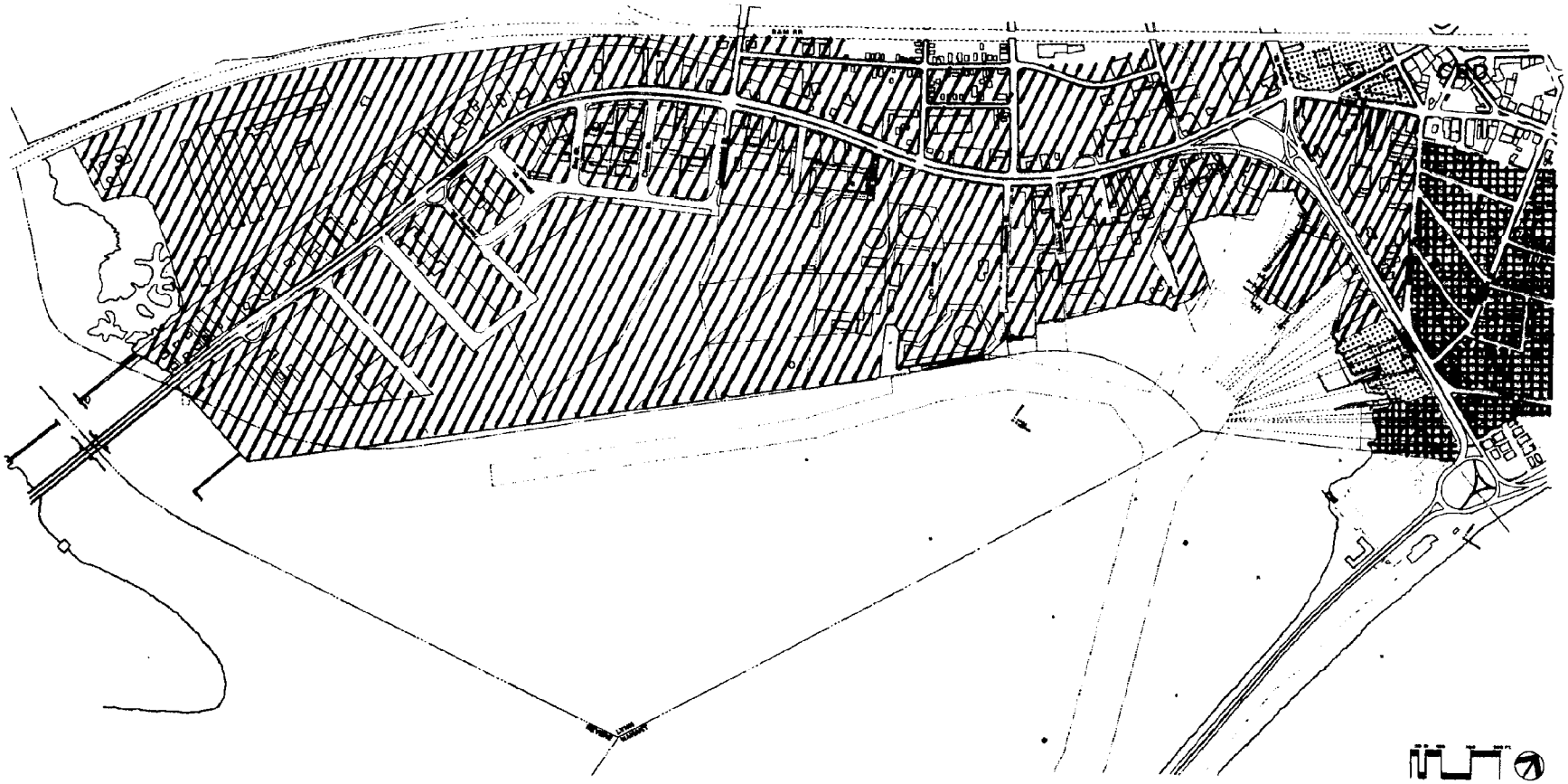

Heavy Industry - no height restrictions

Light Industry - no height restrictions

High Rise Bldg. District - height by city council

Existing Zoning

LYNN HARBOR

In the same manner, industrial development so close to residential areas can undermine other city efforts to improve Sagamore Hill. Decreasing the size of the harbor area may therefore be appropriate. The side of Sagamore Hill facing the harbor might be conveniently removed from the district.

HARBOR FILLING

All vacant and developable parcels are on filled land of varying quality. This will affect the structural design of new construction and is likely to increase foundation costs by as much as 250 percent over development on good load-bearing soil.

Before allowing construction in areas like the waterfront, the new state building code requires an engineering analysis of the potential for soil liquification during earthquakes. If this potential for liquification is high, as it normally is on most waterfront sites, construction may be limited unless pile foundations are used. If pile foundations are used, however, the liquification rating will not effect the building height.

OWNERSHIP

Under a 1910 law, state-owned tidal flats and underwater land in the harbor are available to the city through gift, purchase, or eminent domain for "improving the harbor".

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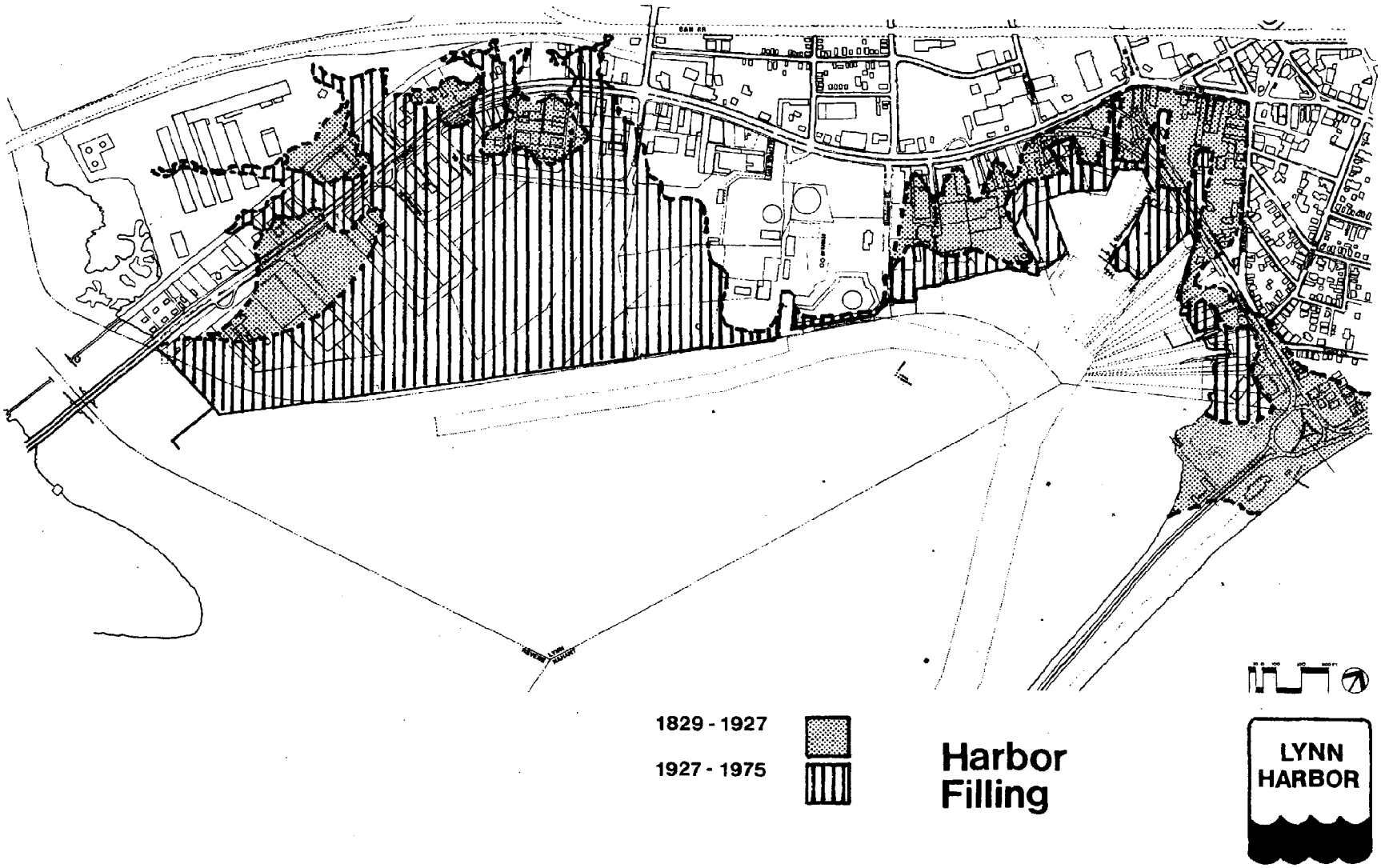
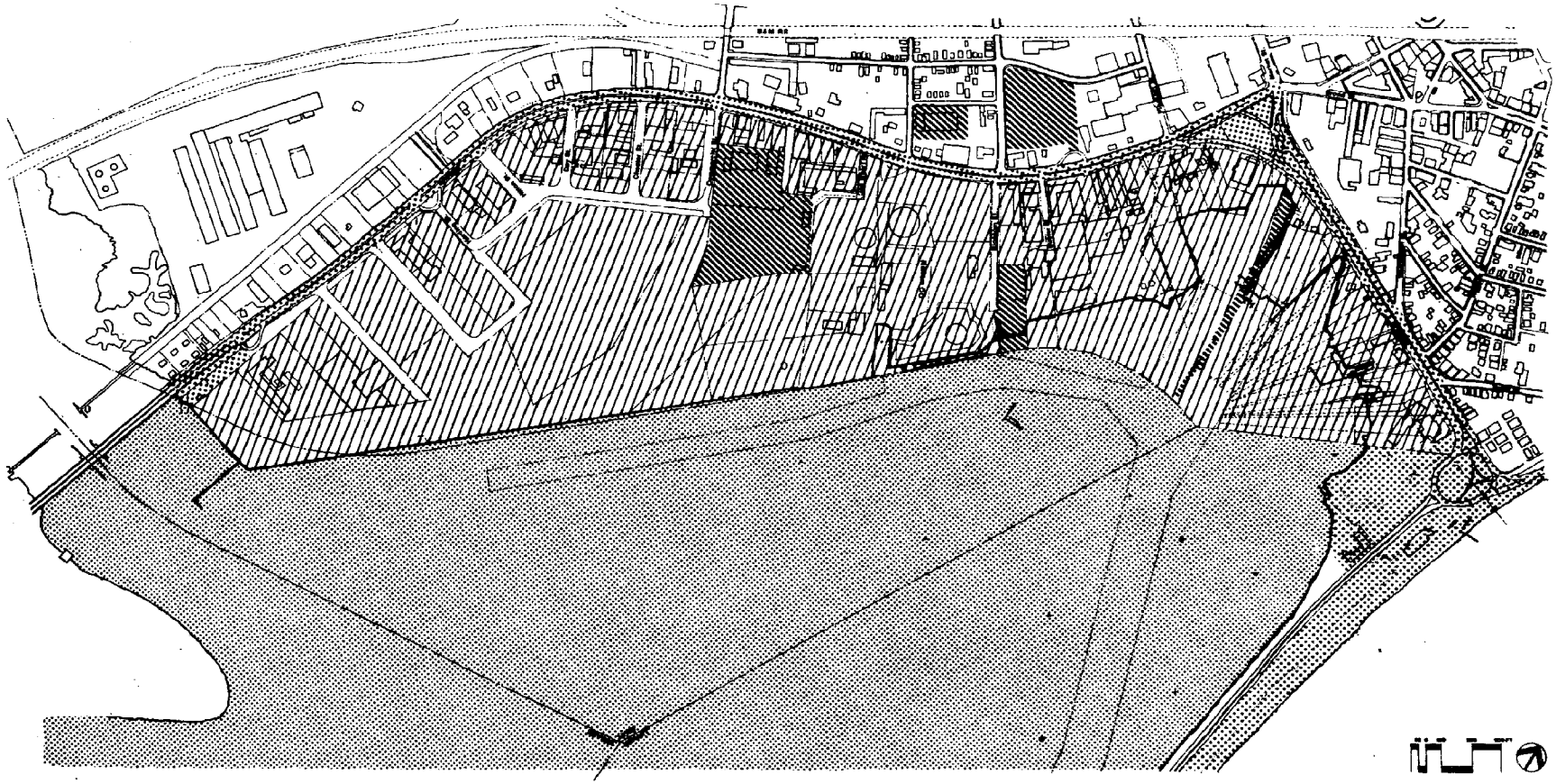




Private
City
State
MDC

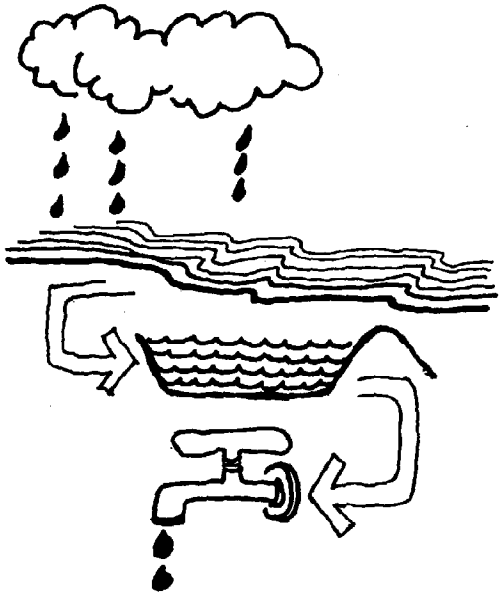
Ownership

LYNN HARBOR

STABLE/CHANGEABLE

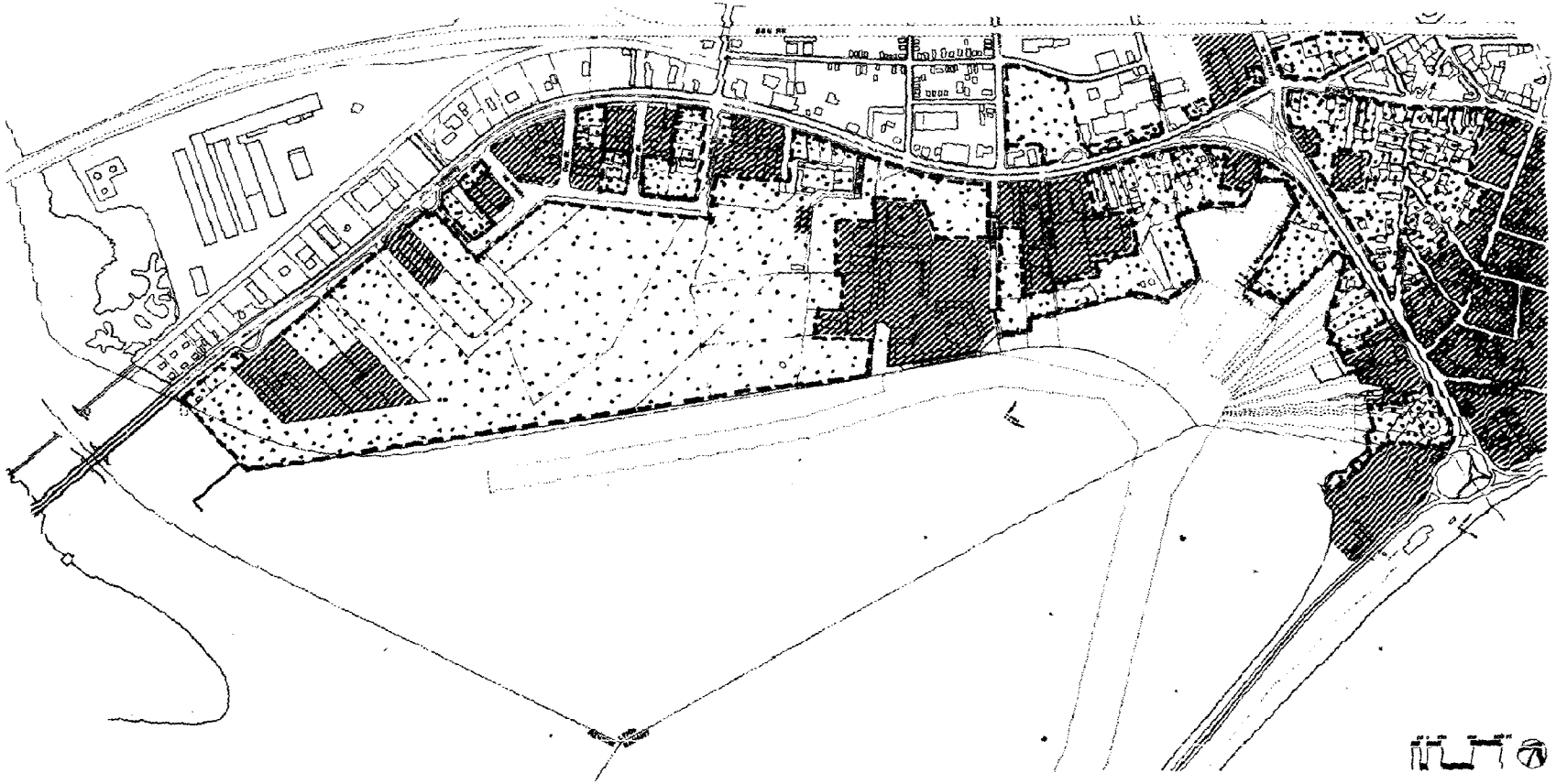
The relatively changeable areas are where harbor land use policies are likely to have the greatest effect. Eighty percent of the shoreline could be considered changeable.

UTILITY SYSTEMS



The availability of utility systems will have a particular bearing on harbor development. These include: the water supply system, the sewage system, other utilities such as natural gas and electric power systems and the street network.

Water Supply System - The Lynn system of watersheds and reservoirs has a total available water yield of 12 million gallons per day in excess of the current peak summer water demand or twice the current average daily demand. The supply and replenishment rate of existing reservoirs are sufficient to handle an increase of as much as two million gallons per day even in summer months, although the distribution system may need to be improved to carry that large of an increase. Two million gallons per day could supply 20 regional shopping centers like Burlington Mall or 13 frozen fish processing plants like Gortons in Gloucester. Therefore, Lynn's water supply system is not a constraint on harbor development, except for an industrial use with very extraordinary water demands. See Appendix III for details of Lynn's Water Supply System.

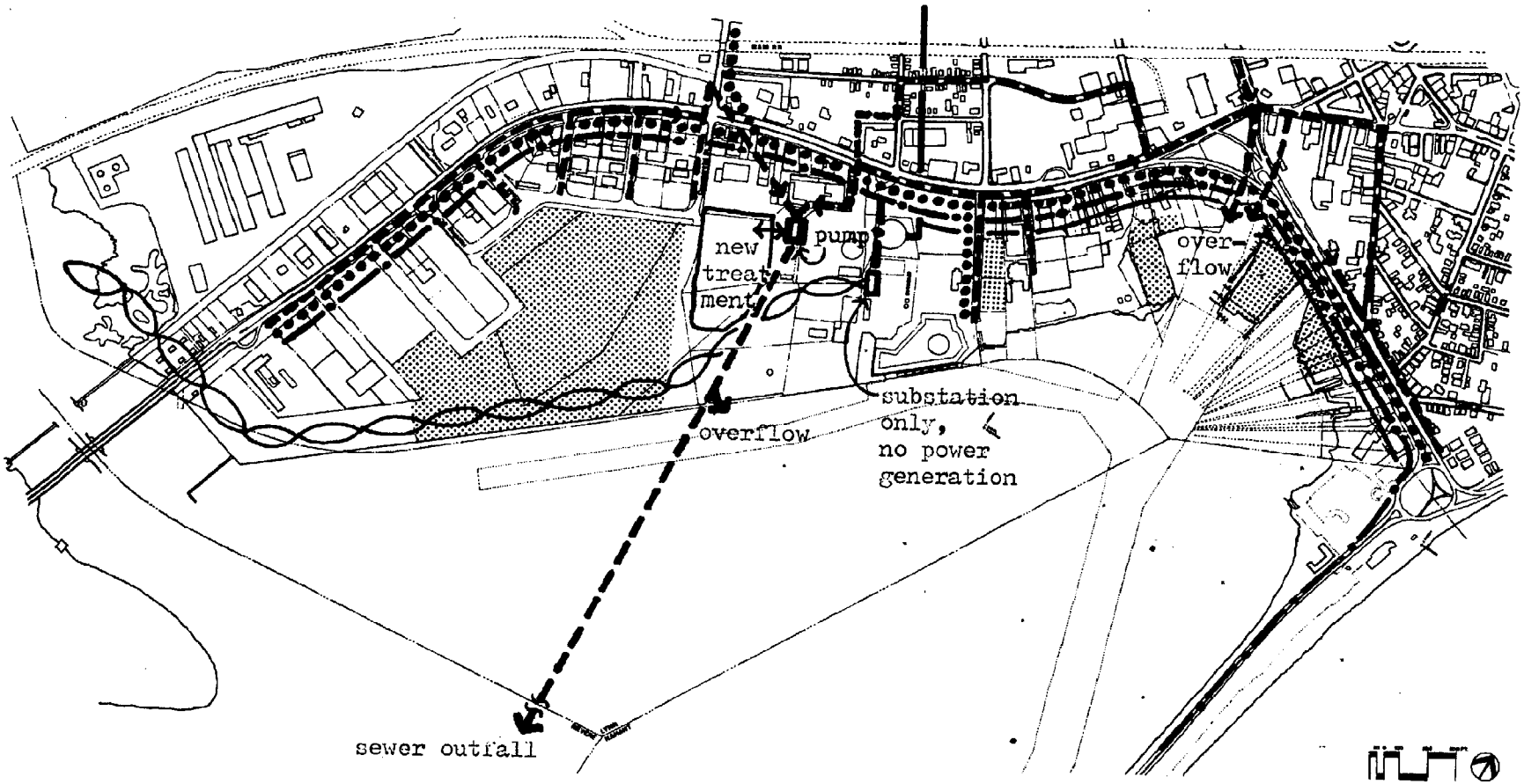


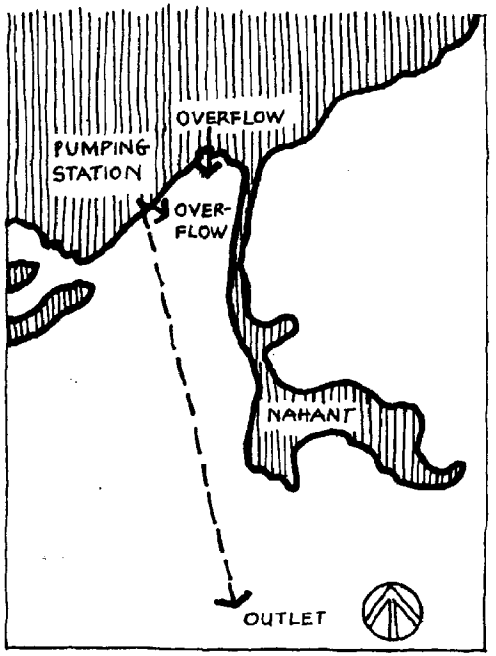
Areas relatively stable & fixed

Areas of relatively low investment & subject to change

Stable/ Changeable

LYNN HARBOR


new treatment
pump
overflow
substation only, no power generation
over-flow
sewer outfall
Elec. Transmission
115,000 v.
Elec. Distribution
Development Site
Combined Sewer
Water
Gas
Utility Systems
LYNN HARBOR



Sewerage System - The sewerage system currently combines both sanitary wastes and storm runoff, although some parts of the city have separate systems. The sewage flows to the city outfall sewer pumping station on the harbor and is pumped without any treatment except screening to deep water one and a half miles from Nahant. At peak flow times, some of the flow is discharged at overflow points directly into the harbor. Law requires that disposal methods not adversely effect the marine environment.

In order tc comply with the law and at the insistence of the Environmental Protection Agency (EPA), a new primary and secondary sewage treatment facility is currently being planned. Construction is not expected for approximately two years, and operation will begin in approximately four years.

Based on Lynn's existing and planned sewerage system characteristics the following conclusions can be drawn:

1. The capacity of the outfall pumping station is currently adequate for peak sanitary flows alone. If storm water flow were not added to the system, no inner harbor overflow discharge would be necessary.

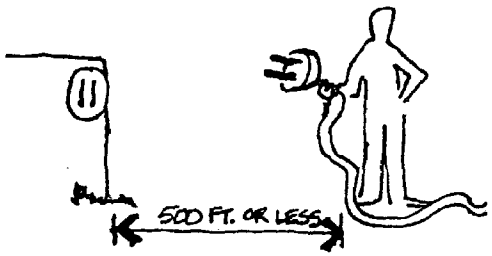
2. Increased flow of one to two million gallons per day after harbor development would probably not tax the existing system during normal flow periods and will be easily accommodated by the new treatment system in four years. At current peak flows, however, increased overflows into the harbor will result. And if such a possibility exists for a specific new project, the EPA and Commonwealth may react negatively to its construction. In addition, until the new treatment facility is

definitely underway, the EPA will hold up any federal funding that might be desired for harbor development.

3. The increased sewerage system capacity of one to two million gallons per day available if storm water were not added to the system could accommodate a large range of new uses on the harbor, a range similar to that mentioned previously under water supply, since water use and sewerage flows are generally alike.

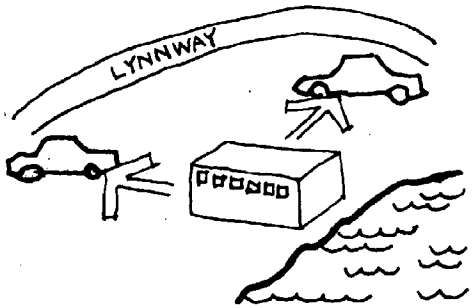
4. New development on the harbor should separate storm and sanitary sewage to minimize total flows to the pumping station. Storm runoff should be directed to the harbor but not allowed to flow directly from heavily used parking, trucking, or work areas from which it might carry petroleum waste products to the harbor. See Appendix III for system details.

Other Utilities - In addition to water and sewerage systems, the location of other utilities, such as gas and electric power, has a possible effect on the costs of development in the harbor.

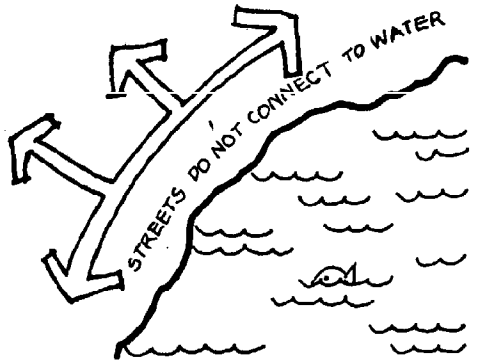


From location information, one can conclude that, first, all utilities are within 500 feet or less of potential development parcels on the waterfront, and for some parcels they are directly adjacent. Sites such as the New England Power Company parcel would require the longest utility extensions. For all sites, the cost (a few thousand dollars) to a developer for utility extensions of the scale required are probably not prohibitive. If the city extends water or sewer service, some of the costs can be passed on to the developer.

Second, underground electric distribution south of Commercial Street is 4,000 volts, and north from Commercial Street around the harbor to Nahant is 13,000 volts. The New England Power Company parcel has relatively easy access to either level of power, while development parcels on the north end of the harbor may experience more difficult access and therefore higher development costs. Access difficulties stem from a Massachusetts Electric Company policy of not tapping the 13,000 volt line except for major heavy power users, which may force power connections to slightly more distant distribution lines. Access to 13,000 volts should be sufficient for any major industrial development on the waterfront.



Street System - The present street system isolates the harbor from the rest of Lynn both physically and cognitively. No streets currently run from the water's edge back into the community, although potential connections exist at Commercial Street, Blossom Street, and perhaps Pleasant Street. The only visual bridging of the Lynnway at present is from vantage points in the Sagamore Hill area (Newhall and Tudor Streets), the upper floors of the shoe loft buildings, and from the telephone building. In addition, all access (except for Commercial Street) to the harbor is from the Lynnway. This then, makes the Lynnway particularly vulnerable to the impact of traffic from any new development. With major development occurring on vacant land, the Lynnway may experience increases as much as 16 percent to 29 percent in average daily traffic and corresponding congestion. Such levels of increase can have serious implications on air quality, safety, etc. Therefore, traffic generation should be looked at in some detail for individual development proposals and be perhaps limited to a level acceptable for the Lynnway. See Appendix III for a more detailed description of the street system.



EXISTING USES IN THE HARBOR

The following summary descriptions of activities in the harbor study area are not meant to be exhaustive of all harbor uses. These summaries document major uses where some informaticn has been gathered.

Ocean Shores Drive - owned by Lynnways Towers Trust

This multifamily housing development has had a difficult history. Originally proposed in 1968 as 21 stories of condominium units with adjacent townhouses, enclosed shopping area, etc., it has been redesigned several times. In 1971 it was three towers of 15 stories each over three levels of parking garage, later that same year two towers of 20 stories each. In 1972 it was redesigned as cne building 15 stories high and later changed again to 10 stories of apartment units. A marina of about 100 to 200 boat slips or shared marina space with the Volunteer Yacht Club has always been considered as a later part of the develcpment. Favorable real estate financial analyses were completed in 1973 and 1974.

Construction was started in 1975 but halted when permanent financing became unobtainable. The current project is for nine floors of one, two, and three bedroom apartments (20 units per floor equal 180 units total), and one ground floor of leasable office space (approximately 20,000 square feet). The units have full amenities and a swimming pool is planned. Surface parking for approximately 300 cars is also planned. The architects are The Design Alliance of Boston. The project has received city permit approvals but no final review frcm state overview offices such as the Office of Coastal Zone Management. Developers are currently finaliz-

ing FHA 221(d)(4) mortgage insurance (not rent subsidy) program approvals which they hope will make financing available to them. The construction phase is estimated to take 18 months. Projected market rate rents are in the range of 250 dollars for an efficiency apartment to 550 dollars for a three bedroom apartment.

Volunteer Yacht Club - owned by the Club

The Volunteer Yacht Club is one of two private yacht clubs in the harbor. The club has no permanent slips but instead rents approximately 28 tie-ups on its floats on a nightly basis of two dollars each. More than 95 percent of the members operate power craft, (there are only six or eight sailboats total), of an average length of 28 feet to 36 feet long, although there are one or two 50 foot boats as well. Mooring for these craft occurs at mooring hookups in the water over the 92,227 square feet of tidal flats owned by the club. There is no charge for these moorings. Shore facilities include a winch house and rollers for boat removal, a clubhouse and bar. There are no boat repair facilities and no food facilities. The site is also used for open boat storage during the winter.

Lynn Yacht Club - owned by the Club

The Lynn Yacht Club is the other private yacht club in Lynn Harbor. The club maintains approximately 90 slips which are occupied principally by powered craft in the 20 to 50 foot category. Dockside gasoline is available.

Shoreside facilities include a clubhouse and the site is used for open boat storage during winter months.

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The Lynnway Marine - owned by the Club

The Lynnway Marine is located on a large manmade peninsula. The land mass of the peninsula extends from the Lynnway almost to the beginning of the federal turning basin. All together the total land area of the peninsula is about five acres.

Creation of the peninsula by filling began in the late 1960's. It is not believed that the fill material is of high quality and it has a history of an internal combustion fire.

The peninsula occupies a pivotal central location in the northern end of Lynn Harbor. Because of its size, the land visually dominates the harbor for several hundred feet to the north and south. The land mass is also the last link between the recreationally oriented northern end of the Harbor and the industrially oriented central and southern regions.

The marina has 73 slips which are rented for pleasure boats, party boats and professional fishing boats. The docks are partially located on municipally owned water flats which border the peninsula on the west. No charge is currently levied for the use of this municipal property by the Lynnway Marine.

The East-West Trading Company, a small tuna processing and transportation firm, is also located on the peninsula. Future plans include investigation of increasing commercial use of these parcels.

Two Acre Vacant Parcel - owned by Clifford Realty Trust

This vacant parcel, 96,150 square feet in area (2.21 acres), is a prime location in the harbor. This parcel was originally a lumber pier before being filled with solid fill since 1970. Currently the site is used for storage of granite and concrete chunks. The site lacks good access to the Lynnway, however, if parcels between it and the Lynnway were acquired not only would good access be obtained, but the total acreage would be increased to four acres, a reasonable size for marina, industrial, or commercial development.

The site is unique because its narrow water edge borders almost directly on the federal turning basin creating enormous potential for the dock or wharf facilities required by a water dependent activity. In addition, the site, along with the Lynnway Marine site, creates almost a natural protected small boat marina harbor out of the tidal flats. If the flats were dredged, this parcel could become the land base for a significant marina development. This parcel was used as the basis of the Chapter Ten marina study.

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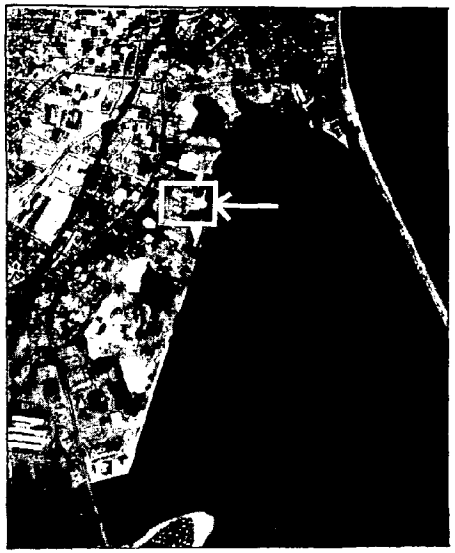

Public Landing - owned by the City of Lynn

These parcels, taken by eminent domain in October 1971, provide the only direct public access to the harbor in Lynn, apart from an MDC asphalt boat ramp in Nahant on the north end of the harbor and a small, poorly maintained public park and beach on the Saugus River at the "Little River" inlet. Some land was filled with solid fill to lift it above high water. The site currently contains a bituminous 30 by 135 foot boat launching ramp, six anchored floats for boat tie-up and open space for parking. A stone dike is being constructed along the water's edge of the property. There is between 200 and 300 feet of water directly in front of this property that is between 16 to 20 feet deep at Mean Low Water.

Future plans for the 92,410 square feet (2.12 acres) of upland space include a small municipal marine service building and increased boat/auto parking. However, the site location on a city street with in-place services, in close proximity to five acres of vacant urban renewal land across the Lynnway, and with deep water adjacent, creates the potential for a more intense commercial use of the site than is currently planned. Even with an increased level of development, public recreation boating access should be maintained.

The detailed feasibility of a municipal wharf or pier across the front of this property should be investigated. Whether the first part of a larger long term master plan for wharf and pier development in the harbor or complete unto itself, a wharf on this public property could help generate development activity and provide for a now nonexistent resource in the harbor.

Boston Gas - owned by Boston Gas Company

This property is used primarily for the storage of vaporized natural gas and the manufacture and storage of liquified natural gas (LNG). Vaporized natural gas is stored in two large low pressure "gas holder" tanks visible from the Lynnway--one at 5 million cubic feet and one a 2 million cubic feet. These tanks are supplied by pipelines from the Boston Gas distribution system.

Liquified natural gas is stored in a 290,000 bbl. white tank near the water. This tank is supplied either from on-site manufacture of LNG or by tanker trucks (11,000 gal. type) in the approximate frequency range of 300 to 400 trucks per heating season or two to five per day depending on gas demands.

Buildings on the site include a control and compressor building and the site supports seven full-time employees.

The major harbor facility on the site is a 40 foot wide by 525 foot long timber wharf with a six to eight inch concrete bearing surface on top. This wharf was used originally for the delivery of coal and oil by a 375 foot long and 7,000 ton capacity ship to the former Lynn Gas and Electric plant (used as fuel in the production of electricity). The municipal channel was dredged to 26 feet deep alongside this wharf to provide a slip for ship berthing. The wharf originally carried two movable electric cranes. Because of energy changes and the construction of the LNG tank and earth dike the wharf is no longer commercially used, but is kept open for public fishing.

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New England Power Company

The existing use of this 2,740,449 square foot (62.9 acre) tract is limited to city sanitary landfill (now about thirty feet above surrounding land elevations) and a semi-developed public recreation area (underneath power transmission lines) along the timber bulkhead from the Lynnway to about 1400 feet north of the MDC fishing pier toward the inner harbor. This land was purchased from the city in 1960 for 100,000 dollars and 700 dollars in lieu of 1960 taxes, for the purpose of constructing a 40 million dollar power plant on the site in the "indefinite future" (five to fifteen years). A waterfront location was required to provide coal and oil delivery by barge.*

All of this property was originally created by filling tidal flats to create industrial development land in 1927.

The New England Power Company built the proposed power plant in Salem instead of Lynn. They are holding this land as future power system expansion land, and have no desire to sell the land for any purpose, although they are willing to have it used on a temporary interim basis, hence the city landfill. If they were to build an expansion power facility in Lynn (the decision is dependent upon already proposed regional nuclear plants elsewhere, energy demand growth, etc.), they could be thinking of a fossil fuel (gas and oil) generating plant, no earlier than the late 1980's. This type of facility could have its fuel delivered by pipeline from Salem or Boston, or by 60,000 barrel capacity ocean barges or tankers, and would be sited on the existing city landfill area.

*Richard Vitali, Lynn Harbor Study, 1971, pp. 82.

The public recreation area along the bulkhead (parking areas, picnic tables, barbeque grates, portable toilets) is used primarily for fishing, for access to the MDC fishing pier, and for access to the tidal flats below for shellfish gathering. The MDC reported a 1974 attendance in the whole area of 65,600 people. The area is only rough graded, to prevent high speed auto games, and minimally maintained because of the high vandalism of picnic tables, toilets, and junked cars, etc. New England Power Company generally tries to create recreation areas beneath its transmission lines and believes this multi-use is positive. They have also been approached by the Metropolitan Area Planning Council about upgrading this Lynn area into a "model" recreation area with boardwalk, concession stands, landscaping, improved parking, etc. What is necessary for improved maintenance or improved development of this area, however, would be increased city police surveillance and patrol of the area.

The bulkhead is in good condition generally with the exception of one small rotted area causing sea erosion of the fill area behind it.

HARBOR DATA BASE

The following information shows some sample pages from the harbor data base that has been started for all harbor properties. Table 3-3, the Harbor Data Property File, is a list of the information that is being gathered and shows the status of this endeavor. This data file is then put onto a computer record in order to easily do multiple analysis of the information, update the information or access any particular information needed for planning or development proposals.

The map included here is a Lynn Assessors map with current high water shoreline and existing structures drawn in. This map identifies each parcel of land with a separate number even though for assessing purposes some numbers have been combined into one assessors' account number on the Harbor Survey pages. The Harbor Survey Sample page, shown following the map, while still containing errors shows the information as it is currently on the computer. The next computer run will correct errors and list information in chronological parcel order. It will also identify each parcel number separately as its own account number to eliminate confusion.

Table 3-3
Harbor Property Data File

	ITEM	COMPLETION
1.	Parcel number	X
2.	Account number	X
3.	Street address	X
4.	Owner/address	X
5.	Area of parcel	X
6.	Assessed land value	X
7.	Assessed total value	X
8.	Current assessed tax	X
9.	Abatement amount	X
10.	Abatement type code	X
11.	In tax title/land court	X
12.	Sales price at last title change	
13.	Date of last title change	
14.	Number of people employed on the parcel (site) by job type	X
15.	Total sales volume	X
16.	Existing use of parcel by Standard Industrial Code (SIC)	X
17.	Square footage of existing building	
18.	Construction/condition of existing building	
19.	Soil character of other description of parcel	
20.	Utilities on site	

Possible future additions might be:

1. Existence of building/land leases
2. Tenant name
3. Type of lease
4. Value of lease

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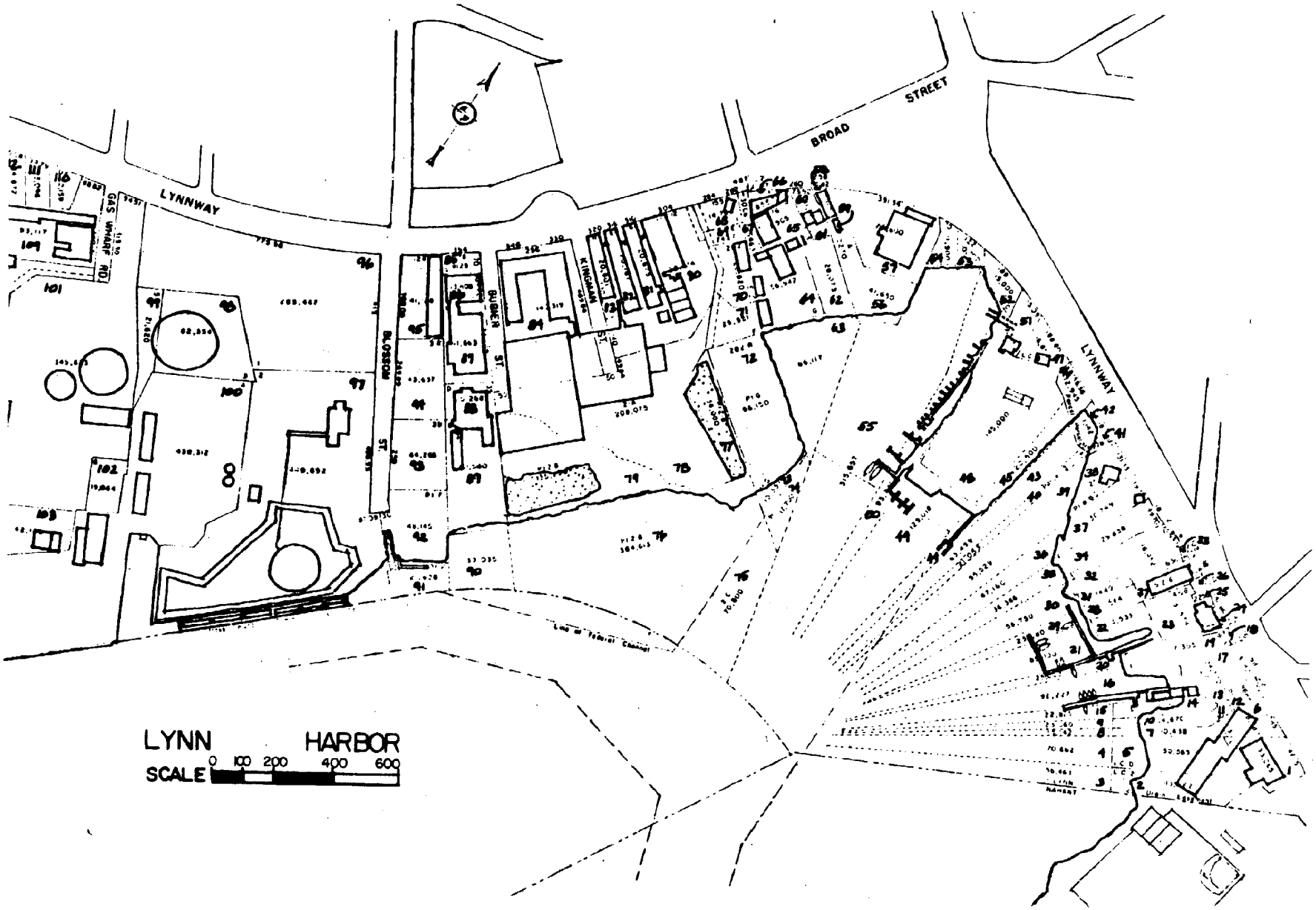


LYNN, MASSACHUSETTS

HARBOR SURVEY

PCL	ACCT NO.	OWNER	LAND AREA	**LOCATION** PL	BLK	LT	SB	TYP	********** BUILDING	VALUE *** LAND
135	054363	FORD LEASING	20001	85	754	03	00	C	309760	98600
137	054364	FORD LEASING	15203	85	754	05	00	L	2870	18240
142	054366	FORD LEASING	39463	85	754	12	00	L		47360
141	054367	FORD LEASING	20000	85	754	13	00	L	1610	24000
140	054368	FORD LEASING	20000	85	754	14	00	L	1610	24000
139	054369	FORD LEASING	20000	85	754	15	00	L	1190	24000
132	054370	FORD LEASING	3693	85	754	07	00	L	700	4430
134	054372	FORD LEASING	9030	85	754	02	00	L	2830	37790
138	054373	FORD LEASING	10550	85	754	06	00	L		12660
150	056168	BERNICE FRISCH	6013	85	755	02	00	L		18690
151	056175	BERNICE FRISCH	33084	85	755	03	00	C	27040	39700
85	056180	BERNICE FRISCH	9129	34	751	01	00	C	17640	38440
44	060985	GLADYS REALTY TRUST	51166	20	749	29	00	L		16380
49	061000	GLADYS REALTY TRUST	274018	20	749	32	00	L		98300
66	091679	RICHARD GLEN REALTY	8557	20	749	43	00	C	106910	31750
58	094415	SAMUEL LISSACK	5865	20	749	38	00	C	19690	14810
57	094940	LLOYD ASSOCIATES INC	73600	20	749	36	00	C	218300	133530
55,56	094945	LLOYD ASSOCIATES INC	357307	20	749	37	00	L		56850
54	094946	LLOYD ASSOCIATES INC	11900	20	749	35	00	L		25630
53	094947	LLOYD ASSOCIATES INC	10700	20	749	34	00	L		37570
165	095365	SALVATORE LOMBARDO	78320	85	757	05	00	C	194880	117480
179	097350	LYNN BOWLING TRUST	147157	85	760	04	00	C	141730	133160
181	097351	LYNN CANTON REALTY	241998	85	760	06	00	C	804440	242000
180	097365	LYNN DISCOUNT REALTY	171640	85	760	05	00	C	439190	171640
167	097537	LYNN MINIT-MAN	3837	85	757	02	00	L		17520
176	097539	LYNN OPEN AIR THEATR	280000	85	759	02	00	C	55390	280000
177	097541	LYNN OPEN AIR THEATR	13578	85	759	01	00	L	860	25520
23	097970	LYNN YACHT CLUB	31579	14	749	16	00	C	31000	44320
22	097971	LYNN YACHT CLUB	102533	14	749	17	00	I	11500	23070
166	097983	LYNNWAY REALTY TRUST	5807	85	757	01	00	C		18570
32	097985	LYNNWAY TOWERS TRUST	46452	14	749	22	00	L		42370
6	097986	LYNNWAY TOWERS TRUST	18580	14	749	04	00	C	31530	46450
13	097987	LYNNWAY TOWERS TRUST	3222	18	749	08	00	L		6440
1	097988	LYNNWAY TOWERS TRUST	33065	18	749	01	00	L		66130
14,15	097989	LYNNWAY TOWERS TRUST	41842	14	749	89	00	L		10260
10,9	097990	LYNNWAY TOWERS TRUST	37730	14	749	88	00	L		9010
3,2	097991	LYNNWAY TOWERS TRUST	99925	14	749	85	00	L		24330
12	097992	LYNNWAY TOWERS TRUST	8688	18	749	06	00	L		21720
11	097993	LYNNWAY TOWERS TRUST	3000	18	749	07	00	L		6000
7,8	097994	LYNNWAY TOWERS TRUST	25580	14	749	87	00	L		6160
5,4	097995	LYNNWAY TOWERS TRUST	121227	14	749	86	00	L		29300
37	097996	THE LYNNWAY TRUST	30749	14	749	24	00	G	13840	31290
36	097997	THE LYNNWAY TRUST	47160	14	749	70	00	L		9430
40	097998	THE LYNNWAY TRUST	21053	14	749	68	00	L		4210
41	097999	THE LYNNWAY TRUST	3998	20	749	26	00	L		3500

4

Local Issues: Taxes and Employment

Local Issues: Taxes and Employment

The harbor is only a single district of Lynn, but harbor development should not take place in isolation. To yield the greatest practical benefit to the city, the expenditure of time, money, and other resources should be undertaken within the context of existing city circumstances and goals.

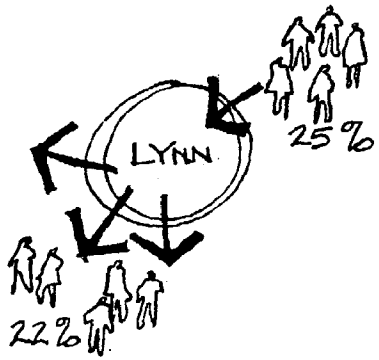
The two most influential economic constraints that will bear on harbor development are Lynn's current employment/unemployment situation and its tax base and assessment policies. To formulate reasonable land use policies, Lynn planners should, first, define the city's employment milieu, its strengths and weaknesses, and from that definition settle on job-development strategies; and second, in light of possible harbor development, clearly set forth the workings of the city's tax policies and from that settle on strategies to increase revenue.

Since new commercial activity is competively scught and not unlimited on the North Shore, Lynn should obtain a clear outline of its prospects for attracting new enterprise. This question, as well as how Lynn might fare under the new 200 mile territorial limit and the possible discovery of offshore oil, is discussed in the following chapter, "A Regional Comparison."

LYNN'S JOB NEEDS

City planners can best define Lynn's job needs by analyzing existing employment, unemployment and state employment growth projections. From that analysis they should be able to formulate a job-development strategy.

Employment Context



Based on Lynn's employment setting, three major conclusions can be drawn: First, employment is dominated by General Electric Co.; of 16,670 employees in manufacturing in Lynn, approximately 14,000 are employed by General Electric. In order to move away from this domination, jobs should be developed in industries unrelated to G.E. but within industries that will draw upon the strengths of the existing labor force. Second, when compared to the region or the state, Lynn has relatively few jobs in certain employment sectors. Jobs should be developed in finance, insurance, real estate, and service to further escape G.E. employment dominance. Third, approximately 22 percent of Lynn's work force in manufacturing and retail commute to work. In order to provide jobs closer to home, and thereby increase direct economic benefits to city revenue, clerical and service jobs should be developed within the city. To reduce the flow of Lynn employment dollars from the city, job development in manufacturing, trade etc., should be coupled with attempts to convince employees to live in Lynn or to increase their spending in Lynn. Detailed information on Lynn's employment-unemployment situation is presented in Appendix II.

Unemployment Context

From Lynn's unemployment statistics, one can conclude that jobs are needed in all categories, however, the problem is most acute in clerical-sales, crafts, operative, and labor occupations. If Lynn finds a practical way to assure that the unemployed will be hired, new jobs in these occupations

will help the unemployment problem. Job training to increase the marketable skills of the unemployed is one method that can help. Unemployment is primarily a regional problem in an urbanized area, however, this is less true for Lynn than many other metropolitan communities such as Boston for instance, because the workforce in Lynn possesses a relatively greater mobility. Therefore, Lynn's harbor development, should be sensitive to the needs of the local unemployed, but probably not tied solely to those needs.

Based on Massachusetts employment-growth projections for the next decade, two conclusions can be drawn: First, clerical, professional/technical, and service occupations will experience the greatest growth and increases in demand, while other occupations will show only moderate growth or some decline. Second, the greatest growth in industry sectors will be in services, construction, mining, trade, and finance-insurance-real estate while manufacturing employment (especially in nondurable goods) will probably decline.

An Employment Strategy

These conclusions should enable Lynn to define an employment-development strategy against which new harbor development can be assessed. The strategy proposed here will be used for later analysis of development activities but should be refined as needed. At least two strategy approaches are possible. One strategy assumes that jobs in needed occupations, such as clerical, are highly likely to develop naturally with general growth over time. Therefore, little effort should be expended on them and greater effort should be used to develop jobs for operatives and laborers.

The second approach assumes that because Lynn has been declining, a major effort is needed to develop jobs even in those occupations and industries where natural growth may

occur but which will not occur in Lynn unless an effort is extended to this end. This strategy runs as follows:

1. Lynn should concentrate first on clerical job development, if efforts meet with early success, then;

2. Develop craft, operative, and labor jobs, primarily in growth sectors but secondarily in any sector; and last;

3. Develop professional-technical-managerial jobs if such employment opportunities can prove attractive to new residents and commuters.

TAX BASE AND ASSESSMENT

An Income Approach

Lynn assessors currently establish assessed value for existing and new uses primarily on the basis of an income approach. The exceptions to this rule are the many existing properties for which the value was historically established by some other method, and which have not been reassessed. New industry, commercial, and residential locations are assessed for property tax at approximately 50 percent of their market value or net capitalized income[1]

The appropriate yearly tax rate is levied against this assessed value of the property. The current total assessed value of real property in Lynn is 252,718,180 dollars.

For example, a 10,000 square foot industrial building and site, leased for one dollar/square foot per year has a net income of 10,000 dollars/year in rent. Capitalized at 20

[1]As required by the Commonwealth, Lynn is moving toward assessment at 100 percent of market value. Last year assessments were at 22 percent of market value, and the tax rate was approximately twice as high.

percent the value equals 50,000 dollars. Therefore, in Lynn the assessed value is 50 percent of 50,000 dollars, or 25,000 dollars. The property tax return for 1977 is then, the tax rate (168 dollars/1,000 dollars assessed value) multiplied by 25,000 dollars ((168/1,000) x 25,000) or 4200 dollars.

Personal property taxes on inventory, equipment and machinery represent another form of tax revenue. Personal property in Lynn is assessed at 40 percent of a book value that takes into account age, depreciation, condition, etc. The current total assessed value of personal property is 23,919,726 dollars.

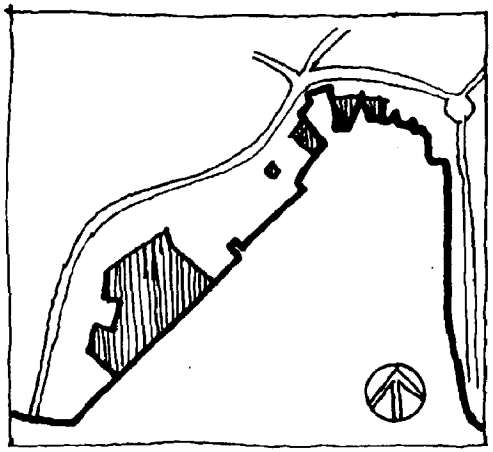
Businesses that list their main offices within the harbor area employ approximately 2200 people (approximately 6 percent of total Lynn jobs) and account for approximately 76,500,000 dollars in gross sales. Most of this income is associated with the strip commercial development along the Lynnway.[2]

The following conclusions can be drawn from Lynn's property tax situation:

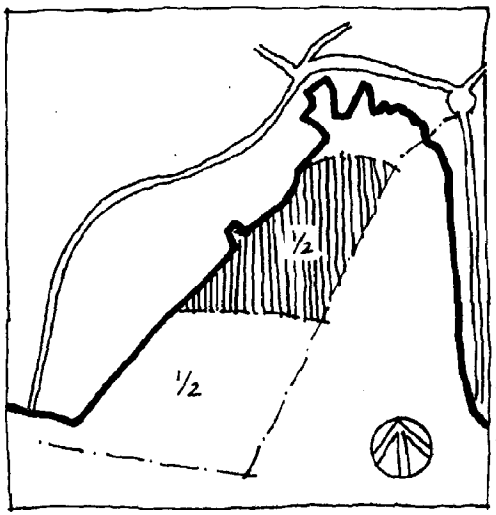
1. The harbor area (from the water's edge to the Lynnway) currently produces approximately 2.5 million dollars in property taxes (5.2 percent of the city's 1976 fiscal budget), primarily from the strip commercial development along the Lynnway.

2. If all vacant land parcels on the harbor, including the landfill area (2,991,000 square feet), were sufficiently developed to produce taxes per square foot of land

[2]Net income equals gross income minus operating expenses, depreciation, and an assumed 10 percent return on investment to the owner. Net income is capitalized at 20 percent to arrive at the market value.



higher than 99 percent of the parcels now produced and equal to the highest now produced in the harbor (two dollars/square foot) the harbor could produce approximately 5.98 million dollars more in property taxes than it produces currently (two dollars/square foot represents 4.75 dollars net assessable income per square foot). This 5.98 million dollars represents a potential change in the current tax rate (168 dollars per 1,000 dollars assessed valuation) of 4.25 to 12.50 dollars, depending upon city service costs incurred in the development. For a typical house assessed at 15,000 dollars, this would mean a tax savings to a Lynn resident of approximately 64 to 188 dollars per year, or about 2-8 percent of his or her tax bill. The probability of this great a degree of development, however, is very low. A more realistic idea of tax relief is 30-50 percent of the above figures. For more exact boundaries of vacant land parcels, see the Existing Land Use diagram.



3. If one-half of the state-owned tidal flats and underwater land use was developed for recreational boating (mooring, docks, etc.) in order to produce taxes at the rate of 0.20 dollars/square foot (approximately two to four times the rate currently received from private lands), then the harbor could produce approximately 1.07 million dollars in property taxes more than it produces currently. This potential new income represents a possible change in tax rate of 1.50 to 2.50 dollars depending upon city service costs involved, or a tax savings on a house assessed at 15,000 dollars of 22 to 38 dollars, about one percent of the tax bill.

4. The above conclusions point out that maximizing taxable development in the harbor can mean a significant dollars saving for the individual taxpayer even if the total

result is only a three to nine percent reduction in the tax bill paid. However, the possible tax rate reductions of 5.75 to 15.00 dollars per 1,000 dollars of assessed value are not by themselves going to solve Lynn's tax base dilemmas or even make Lynn's tax rate competitive with many other communities in the metropolitan region. What can have a far greater effect on Lynn's tax rate is increased investment in an area larger than the immediate harbor, stimulated in part by an improved harbor area. If Lynn can greatly increase boat activity and water edge activity, the harbor will become the visual and recreational amenity that can spur new investment in the Sagamore Hill residential area, the shoe loft district, the near downtown, and perhaps the Lynnway. The resulting economic spin-off effects of new residents, new spending, and new investment can have a substantial effect on the tax base. Therefore, although property tax production from new development is important, decisions about possible development activities should be given as much or more importance to the "atmosphere" these new activities can generate.

Appendix II presents tables of statistics for Lynn's employment by occupation and industry, in addition to employment trends.

5

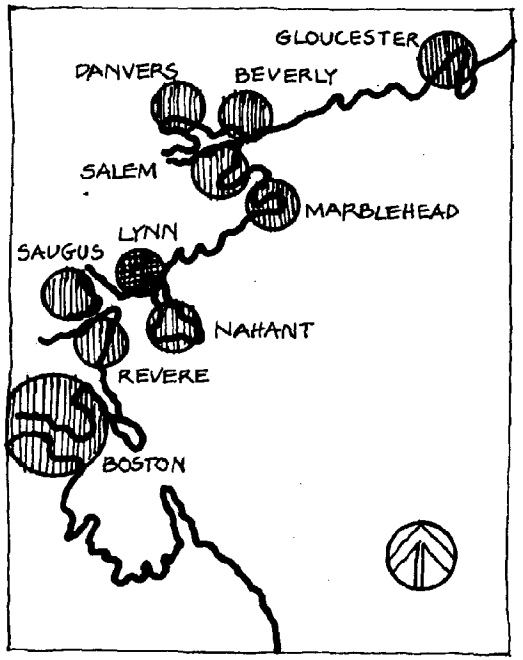
A Regional Comparison

A Regional Comparison

Lynn's development prospects depend not only on its internal structure and policies, but also on its comparative position within the entire North Shore area. Specifically, Lynn's economic prospects depend on four major factors: its chances of capturing a substantial portion of whatever new investment is brought to the North Shore region; its chances of improving its onshore transportation linkage; its chances of benefiting from a revived domestic fishing industry under the new 200 mile territorial limit; and its chances of playing a role in possible off-shore oil exploration and development.

COMPETITION FOR DEVELOPMENT

Lynn is in competition with communities all along the North Shore for new business and new residents. This competition is shaped, and sometimes determined, by the existing uses other North Shore communities make of their waterfronts and the characteristics and potential developable land areas of these harbors. For example, as can be seen in Table 5-1, the uses to which Lynn puts its harbor compare somewhat less favorably to the uses made by Salem, Beverly, and Gloucester harbors, but are brought into sharp relief by Lynn Harbor's very high vacancy rate.



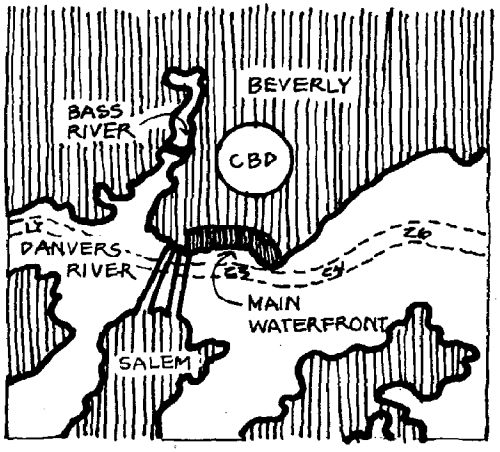
North Shore Waterfronts

TABLE 5-1
COMPARISON OF HARBOR SHORELINE LAND USE OF LYNN, SALEM, BEVERLY, AND GLOUCESTER

	Lynn Harbor	Salem[1] Harbor	Beverly[2] Total	Beverly[2] Main Harbor	Gloucester[3] Total	Gloucester[3] Inner Harbor
Approximate Linear Feet	12,700	56,600	26,500	2,600	50,100	22,500
Residential	3%[4]	16%	36%	0	16%	13%
Commerical	7%	4%	7%	15%	10%	15%
Industrial	18%	25%	17%	23%	26%	54%
Transportation	0%	3%	4%	0	0	0
Public & Semi-Public (Recreation, etc.)	31%	39%	25%	62%	22%	3%
Vacant	41%	13%	12%	0	26%	15%

[1]Blair Associates, Salem Massachusetts, Waterfront Study, August 1963 and interview with David Lash, Assistant to the city planner, 1977. Salem Harbor and Collins Cove areas only. (Excludes North River and Danvers River Areas although the percentages are roughly the same including those areas.)
[2]Approximation based on USGS map (1:24,000) incorporating area from Woodbury Point to the Liberty Hill Avenue Bridge (including the Bass River Shores); and upon interview with Dan Bumagin, former Planning Director, 1977.
[3]Approximation based on most recent city land use map, 1969, by Herr Associates.
[4]Under construction.

The comparison is made with these three harbors, because they represent examples of harbors with active and varied waterfront uses. Juxtaposed with these three harbors, there are interesting conclusions for Lynn. First, The Lynn shoreline is certainly underutilized. While the high vacancy rate of 41 percent is an attraction for developers, it should be understood that this high figure is directly attributable to the private ownership of these parcels. They cannot be considered for development until the City Planning Board has control of them.



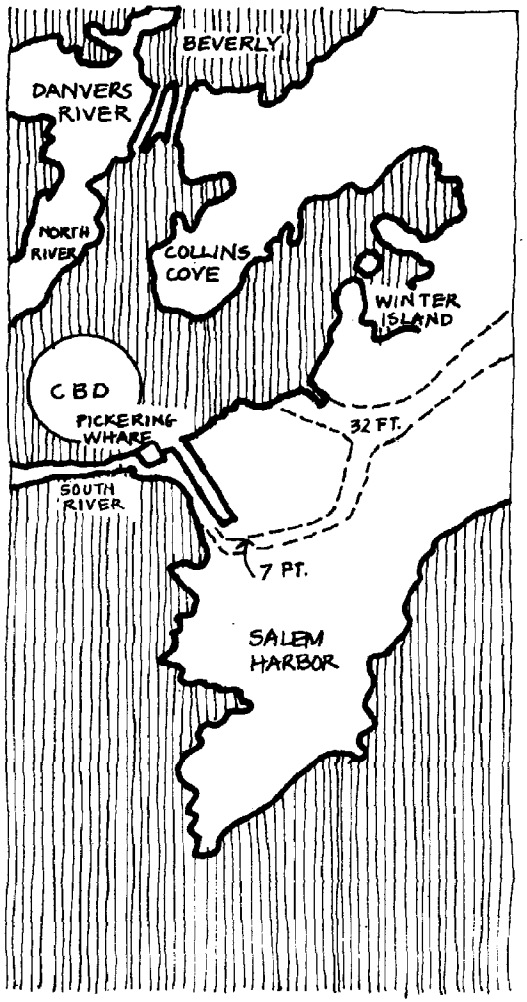
Beverly Waterfront

Other so called vacant parcels face the Lynnway and not the harbor and it is in fact, difficult to even associate the harbor with these parcels. Other development, for example the extension of streets leading to the waterfront, would have to be carried out in order to derive waterfront benefits for these currently removed parcels.

Also misleading is the high figure for public and semi-public land. Much of the public area on the Lynn waterfront is undevelcped and is currently covered with refuse or unstable fill.

From a different perspective and for a more localized area of comparison, Gladstone Associates has forecast the amount of new investment that can be reasonably expected to be attracted to the combined downtown and waterfront areas of Lynn, Nahant, Saugus, and Revere from 1975 through 1995.[5] These forecasts are displayed on the next page.

[5]Information for this table is based on forecasts and conclusions found in Gladstone Associates, Develcpment Potentials for Downtown Lynn, Massachusetts, 1975-1990, and Lynn, City Scale Urban Design Project, Portsmouth, Rhode Island, 1976.



Salem Waterfront

Table 5-2
ANNUAL AVERAGE DEMAND 1975-1995

1.	New retail store space	70-150,000 square feet
2.	New office space	35-50,000 square feet
3.	Housing (higher density waterfront oriented housing for middle to upper income households)	650-900 units
4.	Industrial land	0-10 acres and new facilities for incubator industries
5.	A harbor front recreational complex including marina, restaurant, retail, and entertainment facilities, and possible motel-boatel facilities.	North shore recreation demand is significant, see Chapter 10.

Lynn could reasonably expect to attract a major portion of this investment due to its population, size, available land, and economic dominance in the small area under consideration. These forecasts assume no significantly upgraded access from the Lynn CBD to routes 1 and 128. If upgraded auto access were to become available, the forecasts of possible development could be expanded almost three times.

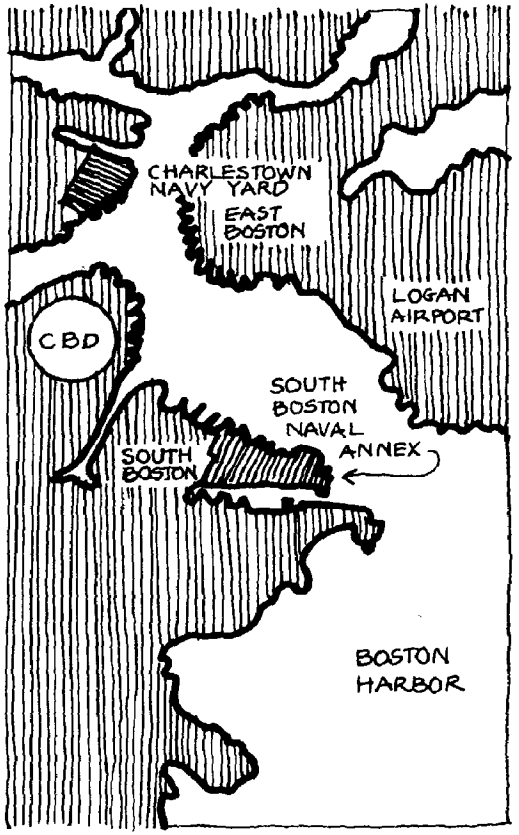
Based on a review of the present conditions and development directions of other North Shore waterfront communities, the following conclusions for Lynn's future development efforts can be drawn:

Lynn has the largest vacant parcel of waterfront land of any community surveyed, the 65 acre New England Power Company parcel. In addition, as compared to other communities whose citizens prefer to develop some of their larger parcels for recreational or community service uses, the Lynn community generally supports the industrial development of the New England Power parcel.

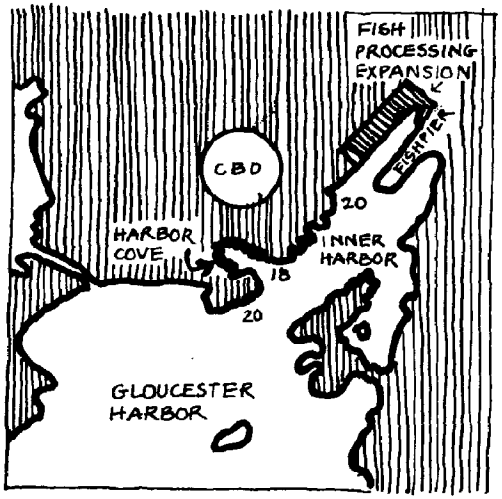
Other communities (for instance Boston and Gloucester) do have a few small (one to four acre) vacant parcels similar to those in Lynn. However, these parcels are not typically accessible from a deep water channel, and they could be freed for development only with some increase of community support and development commitment. Therefore, the small vacant parcels on Lynn's channel or turning basin are among the best small sites available for development in the North Shore region.

There is considerable regional interest in building combined commercial/cultural/tourist facilities; such facilities are found in Boston, Salem, and Gloucester. Rather than planning development on the larger Boston scale, Lynn should encourage on its waterfront the kind of mixture located on Salem's Pickering Wharf. Lynn should also, like Salem, aim its efforts toward an on-going wider revitalization plan. And if Lynn develops its waterfront area from a slightly different angle, it should be easily able to ccmpete successfully for business with Pickering Wharf. See Appendix I for details on Pickering Wharf.

Considerable competition in the fishing industry exists from harbors where fishermen and lobstermen are already established. But in all these communities (including Gloucester) facilities for offloading catch are relatively limited. If the Saugus River lobster fleet should happen to expand, Lynn



Boston Waterfront



Gloucester Waterfront

might very well be able to provide some of the expanded facilities. And if boat storage and supply facilities were more readily available, Lynn might become more attractive as a fishing base.

Lynn's channels are as deep as those in any community surveyed and in most cases, deeper. Industrial land development should make use of this resource. Gloucester is one of the few communities that has facilities for loading and unloading fish, and the truck access necessary for the volume. The demand for this activity appears to be in the upswing and Lynn should consider it.

Surprisingly, Lynn is less developed and less recognized as a recreational boating center than other communities, however, Lynn's potential for this activity is very good.

The demand for recreational boating is large. Even with the expansion of facilities in Gloucester, Marblehead, and Salem, the demand that could be attracted to Lynn appears to be substantial. In addition to the standard support facilities, such as fuel, food, and bait, and to ancillary facilities, such as restaurants, shops, clubs, beaches, or parks, Lynn harbor could also provide connections to the MDC park at Nahant Circle and to the beach across the road.

As more and more people turn to waterfront activities, there is a continuing demand for housing with a view of the sea. These housing facilities are often constructed for middle or high income residents. Lynn has stated in its self-appraisal that this is a group it would like to encourage to settle in the city. Housing on or close to the waterfront is being successfully encouraged by several communities.

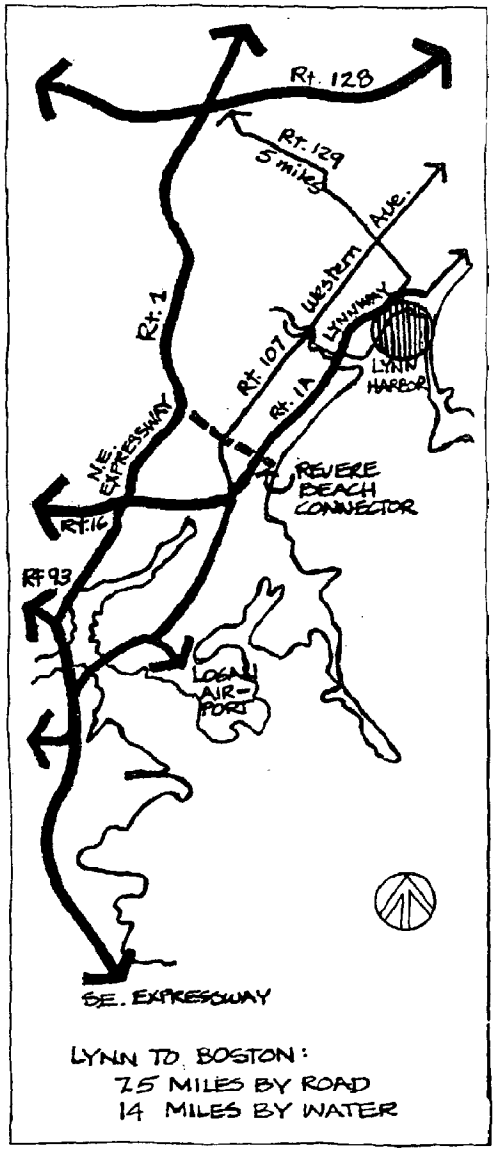
REGIONAL TRANSPORTATION

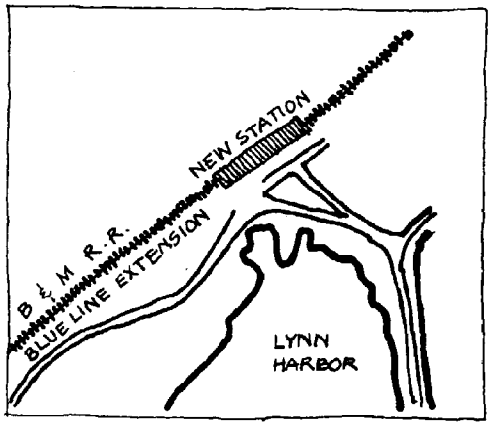
Primarily the regional transportation linkages that will affect harbor development are highway access and public transit.

Present highway access is difficult, (especially to the northern part of the region), and will constrain some types of development (for example, regional shopping and regional truck shipping). Improved highway connection between the Lynnway and Route 107 (Western Avenue) or between the Lynnway and the N.E. Expressway (formerly Route 95) would greatly improve overall harbor access. If designed for access from the Lynnway, the proposed Revere Beach connector will provide the link between the Lynnway and the N.E. Expressway. In addition, if design plans remain unchanged, southbound traffic will also be allowed access from the Lynnway (Northshore Road, Route 1A) onto the connector. This connection will not be available for five to seven years, however, unless political pressure raises its priority.

Lynn's access to Boston and to Logan Airport is excellent. To take advantage of its airport access, Lynn could promote the development of a major air freight warehouse or collection point. The current design and traffic volume of the Lynnway make auto or truck access to and from some land parcels on the harbor extremely difficult. But this situation could probably be improved with some study of the specific problems involved.

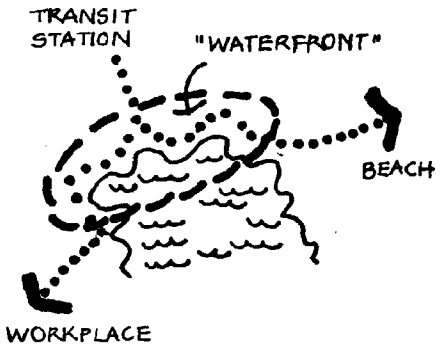
Although one might contend that improved regional highway access has undercut the former transportation advantages of





harbor cities like Lynn by encouraging truck freight at the expense of boat or barge freight, the opposite is also true. For example, good regional highway access has enabled Gloucester to continue to serve as a fishing and processing center. Primarily good highway access benefits industries that distribute to a large regional or national customer area (such as Gortons in Gloucester), while industries that distribute to a smaller regional or local area are less dependent on the long distance economies of the highway. Water transportation, on the other hand is still competitive for long distance, port-to-port shipments and for high volume/weight or low-value products, such as sand, concrete products, and petroleum.

North shore public transportation linkage is provided primarily by commuter rail service on Boston and Maine right-of-way and by bus service to Salem, Marblehead, Revere, Saugus, and Boston. Commuter rail connects Lynn (near the harbor) with New Hampshire, Cape Ann, Beverly, Salem and the North Station in Boston. Although the commuter rail service is used, increased ridership has been discouraged by lack of parking near the downtown station, and by the cost and the required transfer to the Metropolitan Boston Transit Authority (MBTA) subway lines.



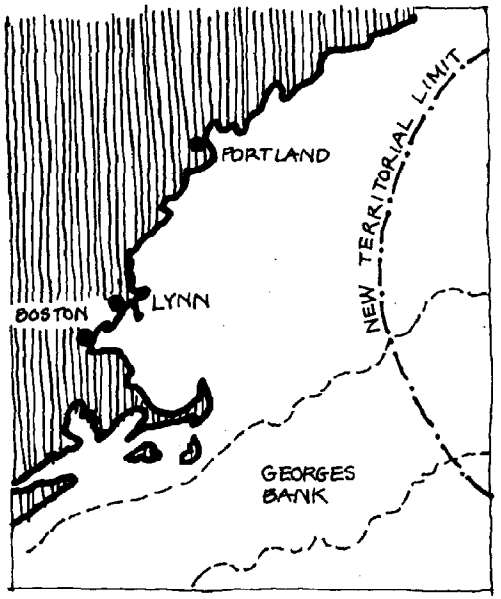
The MBTA plans to extend the Blue Line from Wonderland Station to Lynn in five to ten years. This could have a significant effect on Lynn's employment and recreational possibilities. More importantly, public investment in a new station next to the shoe loft buildings should act as a catalyst for revitalization of the area connecting the waterfront with the central business district. For Lynn planners, the Blue Line extension offers the opportunity to link highly used pedestrian areas, such as Lynn Beach or new industries to the transit station by way of a unique waterfront environment.

EFFECTS OF THE 200 MILE TERRITORIAL LIMIT ON LYNN

Instituted March 1, 1977, the 200 mile territorial limit has been championed as a life preserver for New England's depressed and dying fishing industry. In a process that has been well documented, the U.S. fishing industry declined in the 1960s partly because of competition from superior foreign fleets and their tremendous takes. The U.S. fleet, behind in equipment and technology, fell even further behind.[6] The ultimate beneficial effects of the 200 mile territorial limit, however, are not that easy to predict, and what few studies do exist, do not always agree.

Essentially, two scenarios have evolved. The first scenario indicates that, over time, Because of reduced foreign fishing, most species will rebuild and increase: hence, domestic landings will increase.[7] The second scenario, far less optimistic in nature, states that even without foreign fishing, domestic catches of some species currently exceed the "maximum sustainable yield," and the industry is not likely to see growth except in new species and with new marketing.[8]

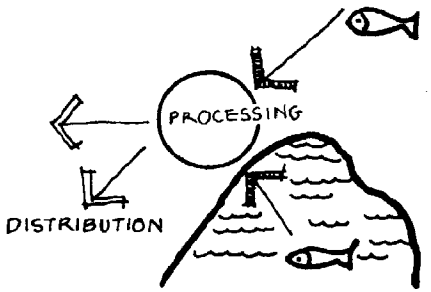
The various details of these two scenarios follow, but there are some initial conclusions. First, in a growth scenario, seafood processng and some fishing could expand to Lynn, especially if land is available. Second, in any harbor tc which fishing boats were attracted, there would be a definite demand for increased docking, berthing, mooring, and unloading facilities. And, third, even in a no-growth scenario, seafood processing activity that was developed in three to five years, rather than immediately, would probably represent stable, long-term expansion in the industry. The expansion scenario is constrained by the following Office of Coastal Zone Management Observation:



[6]Massachusetts Executive Office of Environmental Affairs, Office of Coastal Zone Management, Survey of Uses-Preliminary Draft of Commercial Fisheries, December 1975.

[7]Governor Michael Dukakis, reported in Massachusetts Coastal Zone Management, "Coast Lines," Vol. 2, No. 2, February/March 1976.

[8]John Devanney III, Fishermen and Fish, Consumer Income Under the 200-Mile Limit, M.I.T. Sea Grant Report, 1976.



The passage of the 200 mile fish conservation zone represents an opportunity for fishermen, but not necessarily a heyday. The age and size of the Massachusetts fish fleet, the need for more modern port and harbor facilities, the task of training the next generation of commercial fishermen, finding the millions of dollars necessary to retrofit the existing U.S. fleet, and to purchase new and more modern fishing vessels are issues and problems that require time.

Even with these constraints, the state has projected that a healthier fishing industry could generate 5-10,000 new jobs in marketing, processing, and boat construction within 15 years, and could double annual landings and value of catch in five to seven years. This projection rests on a twenty-five percent reduction in foreign fishing, a 50 percent expansion in the domestic fleet to replace some foreign fishing, and exploitation of presently underutilized species. It will also probably require a change in the fleet from wood-hulled side-trawlers to larger, steel-hulled stern-trawlers.[9]

The expansion in landings may bring about more fish processing plants, new fish-product distribution systems, and perhaps an increase in fish exports.[10] However, the Massachusetts Office of Coastal Zone Management projects that by switching to domestic sources of supplies and reconverting some processing operations, the existing frozen fish processing industry can accommodate growth in domestic landings.[11] In either case, CZM further projects that facilities in the smaller harbors of Massachusetts for docking, repairing, berthing, mooring, and unloading fishing vessels are insufficient to provide for the expected

[9]Massachusetts Executive Office of Environmental Affairs, Office of Coastal Zone Management, Survey of Uses-Preliminary Draft of Commercial Fisheries, December 1975, pp. 6.

[10]Robert Cooke, "200 Mile Limit Won't Cure Fishing Overnight, Expert Says," Boston Sunday Globe, November 7, 1976. The author quotes Leah Johnson Smith of Woods Hole Oceanographic Institute, Woodshole, Mass.

[11]Massachusetts Executive Office of Environmental Affairs, Office of Coastal Zone Management, Survey of Uses-Preliminary Draft of Commercial Fisheries, December 1975.

increases in the fishing fleet. Lynn should heed this projection.

The no-growth scenario has been derived basically from the model of fisheries management constructed by M.I.T. Professor John Devanney, III. According to Devanney's model, the domestic fishing fleet is already catching, for sale as fresh fish, most of the high-value species, such as cod, haddock, pollock, hake, and yellow-tail flounder. Haddock is at low levels because of previous foreign fleet over-fishing. The foreign fleet meanwhile, has been primarily taking for sale, as frozen blocks to American processors or to foreign markets, the low-value species, such as mackerel, squid, whiting, and herring.

Devanney's thesis is that the domestic fisherman are fishing over the "maximum sustainable yield" limit themselves, and that the curtailment of foreign fleets will only increase the stocks of fish that are processed and sold as a frozen product. Even with the 200 mile territorial limit and reduced foreign fishing, the industry needs a better fisheries management program to maintain the present stocks of species. Such a management program may dictate closed areas and seasons, gear restrictions and catch quotas, etc. The catch of these fresh species may have to be decreased or stabilized instead of increased even with the new territorial limit.

On the other hand, since fish processing activity increases or decreases along with fluctuations in catch levels, if a management program is not instituted, then a short-term (one to three years) boom may take place in landings and processing, especially of those species formerly caught by foreign fleets. But, again, the stocks are so low that such a boom could not be long sustained.

For Lynn, the no-growth scenario means the possibility of limited or no expansion of the fishing fleet. Therefore, fish processing should be developed only if the short-term benefits of construction jobs, property taxes, etc. outweigh the long-term commitment of the land to a constructed facility and unfortunately, the likelihood is small that such short term benefits would compensate for the creation of another unused building in Lynn.[12] If, however, such a building can be used for other activities that take advantage of the waterfront then collapse of the processing activity would not represent as great a loss.

Long term increases in landings and processing facilities should be considered if a fisheries management program is implemented or if three to five years elapse and the fish species have had time to replenish. Further, as has been suggested earlier, marketing of new species could expand the growth of the industry.

EFFECTS OF OFFSHORE OIL AND GAS EXPLORATION AND DEVELOPMENT

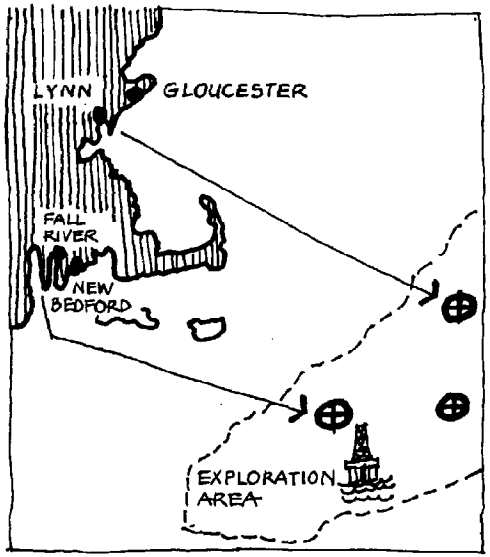
We will soon see the first bidding for oil and gas exploration tracts on Georges Bank.[13] This will be the first public indication of actual demand for development by oil companies. Exploratory drilling in the leased tracts will take place over a one to five year period, and, if a find is made, rig development and oil production could continue for one to two decades. The location of exploratory and production drilling will greatly influence the location of onshore facilities. Only if the northern banks on the tract are drilled is the Boston-Lynn area likely to experience much oil-related development.

[12]Conversation with John Devanney III, March 2, 1977.

[13]The basic information about facilities development is based on Draft Interim Report Number 1. A Methodology for the Siting of Onshore Facilities Associated with OCS Development, by the New England River Basins Commission Resource and Land Investigation (RALI) Project, January 1976; and from conversations with Gene Socolitch of the State Energy Policy Office August 8, 1976; and with Marty Zeller of the Massachusetts Office of State Planning, July 13, 1976.

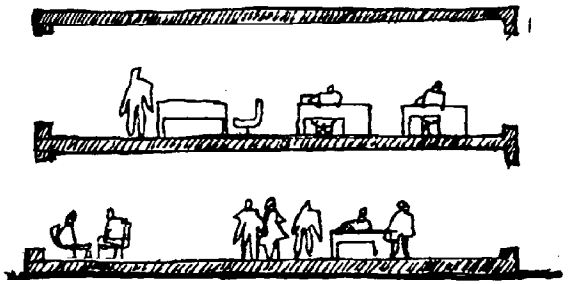
Based on information in the RALI report on energy-related onshore facilites (such as regional office space, platform construction yards, partial processing facilites, refinery, gas plants, marine tanker terminals, pipe coating yards, and pipeline landfalls) and their requirements, for Lynn only the following should be looked at in greater detail:

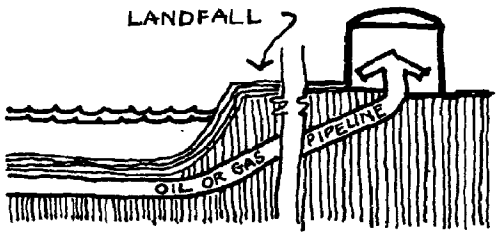
1. Regional office space for company operations;
2. Pipeline landfalls;
3. Onshore service base for logistical support of drilling rigs (crews and materials).



REGIONAL OFFICE SPACE

If a particular region does yield successful exploration, then company operations will require office space during the development phase (five to ten years). These offices are usually located in a medium-sized coastal city, such as Lynn, New Bedford, etc. And because companies will differ on appropriate cities in which to locate, the potential of Lynn's attracting at least one company is increased. Each office accounts for approximately 50 executive, research, managerial, and clerical personnel who earn an average of 20,000 dollars per year; and each office will require 20,000 to 75,000 square feet of space. Although Lynn has a chance of attracting this kind of facility into rehabilitated loft buildings, the demand will not occur for several years, and the competition from communities with vacant office space and established service harbors will be great. Therefore, Lynn's chances of capturing such a waterfront activity are very slim.





PIPELINE LANDFALLS

If and when oil and gas are discovered and put into production (a process requiring three years or more), only then will oil and gas pipeline landfalls be established. In addition, pipelines are not constructed until companies determine that production levels from the find are sufficient to justify the pipeline expenditure (one to two years after a find). If a decision is made to construct a pipeline, then landfalls are established to minimize distance to a refinery, or into existing distribution pipeline networks. Although Lynn may be one of the closest landfall points for a few drilling locations, and although the ocean bottom conditions may be reasonable for pipeline installation, Lynn does not have a nearby refinery or a developed pipeline distribution system flowing from it. In addition, even though a landfall would be a tax-producing activity, it would not add noticeable waterfront activity, improve the image of the harbor or create a significant number of jobs.

Lynn should not seek to keep land available specifically for this potential use, although provision of large areas of public open space on the waterfront would leave open the future option of joint recreation-pipe landfall activity. In this case, the pipeline would need to continue further inland in order to reach a tank farm, refinery, or distribution network.

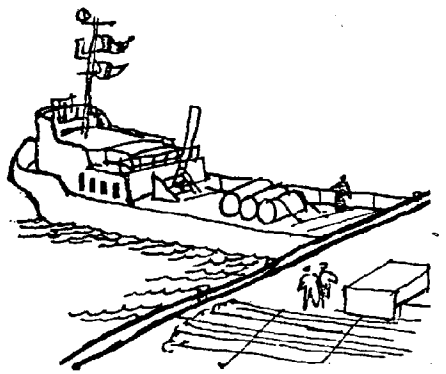
ONSHORE SERVICE BASE TO SUPPLY MEN AND MATERIALS TO OFFSHORE PLATFORMS

Oil companies establish two kinds of service bases: temporary, during exploration phases; and permanent, during development/production phases. Permanent bases are normally

located in established commercial harbors with adequate marine services. They often require 30-50 acres of land with 500-1,000 feet of docks or wharfs on 15-20 feet of water that can be leased or purchased by the oil company. The land is used for offices, warehouses, and parking space, none of which are particularly employment intensive. Because Lynn cannot meet the land and infrastructure requirements, the city should probably not look toward this use.

Temporary service bases, on the other hand generally require:

1. A protected all-weather harbor close to the drilling site;
2. Three to five acres of land for each rig served (two to three boats per rig) that can be leased on a short-term basis (one year or less). The land should have on it two to three covered warehouses (50' x 100'), one of which is close to the docks, and some open space for pipe storage (one acre);
3. 15 to 20 feet of water depth at dock;
4. Two-hundred linear feet of loading space;
5. Access to rail, highway, and airport facilities (nearby heliport is desirable);



Typical Service Boat

At present Lynn cannot meet all of these requirements, although some minimal warehouse construction and wharf space might be sufficient to attract a temporary base. The oil companies themselves do not operate the supply bases, but do often dictate to their drilling subcontractors where the

base will be established. Because Lynn is close to marine repair facilities in Boston, close to the airport, and has indigenous skilled labor, machine shops, and other community support services (such as fire, medical, catering, motel etc.) and does not have a hectic harbor (often an important consideration to a crew and supply boat operator), the city in the following one to three years could prove attractive to a service boat company. Temporary bases, however, are also known for their highly cyclic activity and "footloose" nature. Because of this, service base activity should be viewed by Lynn as a potentially desirable adjunct to other development in the harbor, but not as the primary user of a harbor facility.

6

Assessing Development Potential

Assessing Development Potential

To identify and assess the development potential of specific and generic activities on Lynn Harbor, a public planning body must: first, identify the community objectives which development should serve; second, develop a list of possible activities which are compatible with the physical characteristics and constraints of the harbor (for example, activities that typically occur on New England waterfronts; that seem desirable for Lynn; that offer chances for growth); and third, from such a list of possible activities, select for development those activities that most closely meet Lynn's objectives and constraints.

The analysis presented here is meant to be a first step in helping Lynn draw up a cohesive plan for city development. If the city wishes further analysis, it may choose to undertake a targeting study similar to the study completed by Arthur D. Little, Inc. in 1970 of the entire Commonwealth.[1]

In the study, researchers identified three industries, (computer peripheral equipment, biomedical instruments, and air or water pollution control equipment), that met state criteria for high growth and suitable technology and then, identified individual firms within those industries toward which to direct state promotional resources.

[1]Arthur D. Little, Inc., Cambridge, Mass., Fostering Industrial Growth in Massachusetts, Volume II, Strategies for Development of Selected Industries in the 1970's, Massachusetts Department of Commerce and Development, 1970.

Similarly, the Community Development Corporation of Boston, with help from the Harvard-M.I.T Joint Center fcr Urban Planning did a targeting study in 1976 of industry for the Roxbury Crosstown Industrial Park. This study is a useful illustration of the targeting process for a smaller city or area. The study incorporated three methods of targeting: the first two labor-oriented, and the third location-oriented.

The 20 two-digit Standard Industrial Code (SIC) industry groups in Boston were reviewed with emphasis on labor-market criteria, such as past employment growth, employment projections, wages, layoffs, occupations, turnover, space intensity, and minority hiring. This review yielded three "best" industry groups.

Profiles were developed of residents in Rcxbury and within commuting rings of the proposed site based on age, educational attainment, and minority status. Similar profiles of all three digit SIC industries in New England were developed and ranked by how well their labor force demands could be met by the populations in each of the commuting rings. Based on this ranking, the top 30 industries resulting from this ranking were then used to develop a list of firms within each industry based on age, size, employment growth, sales growth, and net worth. This list was then used as a mailing list for a direct mail and advertising campaign.

Using the national EDA Office of Planning and Program Support Advisory Service, product classes and firms were matched to the Roxbury-Boston area based on locational features, such as distance and size of markets; transportation services by truck, rail, air and water; existing

industries; resources; utilities; sites and buildings; labor force; and local services. The results (five digit product classes graded for match with Roxbury) corresponded fairly closely to the industry groups identified using the first two methods and served as a further way to rank firms listed by the second method.

The broad industry groups that were ranked highest by all three methods were Fabricated Metals (SIC 34), Machinery (SIC 35), and Electrical Machinery (SIC 36).

The analysis presented in this document is only the beginning of a similar targeting process and makes many assumptions about the criteria and measures of evaluation to be used. Furthermore, a caution should be mentioned about targeting studies themselves. Even with a target list of firms, the rate of attraction is very low. It is low because there are other factors such as general economic conditions, unique internal firm characteristics, individual firm locational criteria, or readiness to move, etc., that may or may not be reflected in the targeting techniques.

To Lynn these observations mean that a much more detailed targeting effort should be undertaken only if sufficient city staff time is available, and if a large new industrial land parcel, such as the New England Power Company property, is available for location by these newly attracted firms.

Even if detail targeting is not called for, potential harbor area activities should be analyzed against community objectives before being made the focus of development policy. The activities that are analyzed here are a beginning of such an analysis.

CRITERIA FOR ANALYSIS OF ACTIVITIES

Selected activity-land use options are evaluated on the basis of their match with community objectives. The detailed analysis of activities is included in Appendix IV, and summary findings are found at the end of this section. Activities are measured against the following community objectives:

1. Potential activities should make use of the waterfront;
2. Potential activities should reduce the tax rate;
3. Potential activities should reduce the unemployment rate;
4. Potential activities should be compatible with public access; and
5. Potential activities should have a market feasibility.

Criteria Number 1

Potential activities should make use of the waterfront, including the commercial and visual possibilities of a waterfront location. An activity's use and need of the waterfront can vary from dependency to irrelevance. Dependency exists when direct land-water contact is required for the activity, such as the shipping or receiving of raw materials or products by water transportation. Water use occurs when large volumes of seawater are required for industrial purposes, although a waterfront location may not be necessary. Waterfront supportive or complementary use occurs when an activity reinforces an existing waterfront activity or builds new waterfront activity. Irrelevance occurs when activities that neither require nor support the waterfront location are placed there because of other

nonwater-related economic factors, such as good land transportation and site access, cheap land, etc. These activities often, although not always, turn their back on the waterfront and affect it negatively, by polluting, eliminating access to, or destroying the shoreline.

Defining "Water-dependent"

In a Waterfront Industry Study for San Francisco, Gruen Gruen and Associates make a clarifying observation about industrial uses that seek the waterfront. They conclude that the requirement of shipping or receiving by water is too restrictive a definition of water dependency or relatedness and suggest that "to be water related, an activity or firm must gain cost saving or revenue-differentiating advantages, neither of which is associated with land rents or costs, from being located on" the waterfront, "that it could not obtain at an inland location." This means that acceptable waterfront uses include those that are cheaper to operate next to the water than inland, or can charge customers more because of their waterfront location. They further suggest that this definition of water relatedness is precise and allows a planning body to determine "whether an industry would produce less benefit to the region" if it were excluded from the waterfront.[2]

The definitions set forth by Gruen Gruen and Associates, beyond merely evaluating an activity's physical and economic dependency on a waterfront location, also entail commercial and visual possibilities. Because the image of the harbor area is a critical feature in the attraction for many types of development, Lynn should give serious consideration to whether a possible venture will build or support a high level of public interest and boating activity. Both recreational and commercial development can improve the general public image of the harbor and of the larger harbor vicinity. Allowing activities on the waterfront on the basis of their physical need for waterfront space may be necessary

[2]Gruen Gruen and Associates, Waterfront Industry Study, A Report to the San Francisco Bay Conservation and Development Commission, July 1976, pp. IV-4.

for some selected priority uses, such as fishing, but the benefits to Lynn Harbor will be greater if those uses also mean increased public participation and boating activity.

Criteria Number 2

Potential activities should reduce the tax rate by adding new tax revenue. Because the city is currently very concerned with a falling tax revenue, activities can be evaluated on the basis of their revenue potential. However, public planners interested in the waterfront should bear in mind that the productivity of the waterfront can be measured in ways other than tax revenue alone. Public spaces, for example, although not producing direct revenue, can help produce an environment that attracts people, thereby providing consumers for nearby goods and services--an economic benefit potentially far greater than the foregone tax revenue from the public space itself. One can evaluate the direct impact of new activities on the property taxes of Lynn taxpayers in terms of tax dollars received by the city or in terms of a change in the tax rate, by noting the effect of increased assessed value on the total assessed value of Lynn. Evaluating what difference it will make in the tax rate is one method of comparing the revenue advantages of one activity with another.

Lynn's tax base and assessment policies can be found in Chapter Four. For purposes of a rough comparison, because assessed value is proportional to income, the net income/rental per square foot of each activity will give an approximation of the relative ordering of activities by their potential property tax impact. However, such a simple comparison may also easily overlook the potential costs to the city for schools, police, fire, roads, and general government services. For example, residential development that adds children to the school system incurs substantial service costs, yet if those costs were ignored, residential activity from an increased assessment standpoint would appear quite favorable.

Changes in the current tax rate (168 dollars per 1000 dollars of assessed valuation) can be calculated by dividing the total annual fiscal gain or loss of a new development by the assessed value of the community plus the new development. The fiscal gain or loss is based on the following steps as outlined in Herr:[3]

Calculating Change in Tax Rate

1. Estimate the tax revenue from a development (assessed value multiplied by tax rate);

2. Subtract an estimate of school costs (number of new students multiplied by average school cost per pupil);

3. Subtract an estimate of nonschool costs for residential or nonresidential development (.3 to .7 multiplied by assessed value of development multiplied by general tax rate);

30%-70% of New Tax Revenue Generally Covers City Service Costs for Streets, Utilities, etc.

4. Add or subtract an estimate of resultant change in state school aid because of increased assessed value (percentage change in school aid multiplied by current school aid); and

5. Subtract an estimate of average year debt service of major public improvements.

Criteria Number 3

Potential activities should create permanent and varied employment opportunites for Lynn's unemployed and employed, and diversification of local sources of employment. For a discussion of the city's current employment status and needs and how they relate to state projections for change in industry-occupational sectors, see Chapter Four.

[3]Philip B. Herr and Associates, Boston, Mass., Evaluating Development Impact, prepared for the Massachusetts Department of Community Affairs, Office of Local Assistance, Local Assistance Series 3, February 1976, pp. 66-84.

Criteria Number 4

Potential activities should be compatible with public access and with adjacent or joint activities. Compatibility is based on the presence or absence of nuisance side effects, such as odors, vibrations, noise, or other factors, such as site use, physical appearance, building type used, amount of automobile truck access necessary, etc.

Criteria Number 5

Potential activities should have a market feasibility based on existing market demand or a potential demand undervalued at the present time. Market conclusions are included in the analyses in Appendix IV. The results of these analyses are not intended to be exhaustive but to give a sense of the market picture and indicate whether further consideration of certain activities is justified.

CHOOSING ACTIVITY OPTIONS FOR FURTHER ANALYSIS

First, from the great number of activities that are possible on a waterfront location or have occurred on New England waterfronts, the options for analysis can be narrowed by eliminating from a broad list those activities that seem to be unreasonable based on three points:

1. An activity's land needs do not fit the nature of typical sites available on the waterfront (size and access).
2. The attraction of locating in Boston or surrounding communities is too great for an activity to seek a Lynn location.
3. The economic trends and climate of the region suggest a very small likelihood of an activity being attracted to Lynn.

By these criteria, the following options that at one time or another have been suggested for Lynn can be eliminated from consideration here:

Oil refinery (area required 500-3,000 acres);

Deep-water oil port (existing Everett facilities are too great a competition for Lynn);

Landfall for oil or gas pipeline (requires a tank farm, refinery, or pipeline network on land side);

Electric power generation plant (has been rejected already by New England Power Company, possible only if a new energy situation creates a need for new small production facilities);

Shipbuilding (competition from Boston and other East Coast port areas is too great);

Biomedical instruments and computer peripheral equipment industry is already established around Route 128;

Sports training or playing complex and convention facilities (regional competition from Boston and Route 128 locations is too great); and

Cinema center (regional competition from Boston and Route 128 locations is great, although local entertainment is needed in Lynn).

Second, the options can be narrowed by eliminating activities that are not waterfront dependent (do not require water transportation of raw materials or products) or are not waterfront supportive (do not build or reinforce waterfront activities and image). An example is an oil or gas storage tank farm.

Third, the options can be further narrowed by eliminating activities that do not lend themselves to mixed use of land or water parcels because of public safety or private security needs. For example: oil or gas storage tank farm, chemical plant, building products, or open storage and warehousing.

Other Problem Characteristics

Potential problem characteristics could be expanded to include other environmental spillover effects such as excessive smell, noise, vibration, solid waste, or water use; or other factors indigenous to the site, such as unsuitable topography, drainage, soil capability, and utilities; or even broader concerns, such as some level of public safety. However, for selecting some activities for further analysis here, the expansion is not necessary.

The activities chosen for further analysis include: seafood processing, warehousing, commercial fishing resulting from the new 200-mile territorial limit, offshore oil support services, marina, and miscellaneous retail stores.

Certain options open to Lynn Harbor but beyond the scope of this study are: miscellaneous manufacture of large bulk-low value products shipped by water; manufacture of pollution control equipment; restaurants; office space; marine-related research facilities; public open spaces; museums; a hotel; housing; and a maritime trade educational center. Some of these activities will be commented upon here but have not been fully analyzed.

ACTIVITY ANALYSIS SUMMARY

Criteria / Activity	1. Use of Waterfront	2. Tax rate Reduction (Dollars per 10,000 sq.ft. Of site used	3. Employment Impact	4. Compati-Bility With other Activities	5. Market Feasibility
Seafood Processing (see appendix)	Not dependent on waterfront for transport, but does gain cost savings there. Boat activity but attraction for the public.	5-10 cents	Greatest # of employees are semi-skilled and non-skilled labor. Fresh processing more labor intensive than frozen processing. 25% of seasonal employment are permanent. Some year-round operations. Some effect on employment needs.	Truck access and odors limit location, but access for public possible.	200 mile limit is creating new foreign markets for products. New plants will result from U.S. or foreign investment rather than existing plant expansion.
Marina (see appendix)	Dependent on waterfront. (Winter boat storage not dependent on waterfront but usually occurs there.) Seasonal but much boat and activity for the public.	1/2 cent	Not employment intensive. Part time and seasonal labor with low wages. If boat/engine repair included than skilled labor and operatives needed.	Good public access. Compatible with most activities, provides much visual amenity. Potential package conflicts in joint use situation. Potential boat traffic conflicts with commercial boats.	Rough estimate for marina slips in Lynn is better than 440 boats. Feasible if dredging occurs in some areas.

Criteria / Activity	1. Use of Waterfront	2. Tax rate Reduction (Dollars per 10,000 sq.ft. Of site used	3. Employment Impact	4. Compati-Bility With other Activities	5. Market Feasibility
Warehousing (see appendix)	Boat activity depends on product stored. Minimal attraction for people. Generally, not a positive use of limited shoreline space.	1/2 cent	Not employment intensive. Mostly operative jobs at limited wages. 29% clerical jobs. Minor effect on job needs.	Not normally noxious, but truck activity limits joint uses. Public access possible if outdoor storage not needed.	Very little growth predicted for the industry. No existing sites have both good water & truck access. Lynn can capitalize on access to Logan Airport.
Commercial Fishing (see appendix)	Boat and public activity most of the time, peak at unloading. Very dependent on waterfront. Often competes with recreational boating for space.	No real property tax contribution except through mooring and landing fees. Personal property taxes possible on $300,000 - $1,000,000 value of new trawlers.	Not employment intensive. Most jobs are in labor occupations but at good wages.	Compatible with many other activities.	Two scenarios, some expansion probably feasible.
Temporary Offshore Oil Support Base (see appendix)	Dependent on waterfront. Boat activity but limited attraction for the public. Small amount of actual shoreline needed.	Less than for warehousing alone (Less than 1/2 cent). Landing fees possible.	Not employment intensive. 1/2 of jobs filled by outsiders. Mostly operative and skilled labor employment but at high wage levels, some managers. Short term jobs.	Little traffic generated but storage limits joint use of site. Access for public possible but probably limited due to storage.	Feasible with wharf and warehouse improvements. Much competition from other harbors. Should be adjunct not major focus for harbor development.

Criteria / Activity	1. Use of Waterfront	2. Tax rate Reduction (Dollars per 10,000 sq.ft. Of site used	3. Employment Impact	4. Compati-Bility With other Activities	5. Market Feasibility
Miscellaneous Retail Shops: Specialty, Fish & Convenience Sales (see appendix)	Not waterfront dependent but high "people" generator. No inherent boat activity but can draw boat activity. To maximize waterfront support, shops should be oriented to water.	1-2 cents	Median range of full time employment per limit of site. Mostly clerical or sales jobs with low wages, but likely to employ Lynn residents.	Compatible with many activities but auto traffic can be a problem. Public access and open space should be clearly defined as public. Good access if activity is oriented to the water.	Probably feasible if linked to Central Business District, yet remaining differentiated.
The following activities have not been analyzed in as great a detail as the activities listed above; however, observations about them may be useful to consider.					
Restaurant	May be dependent if success dependent on waterfront view. High "people" generator and possible boat attraction. Desirable for waterfront.	2-4 cents	High employment intensity. Most jobs in service with low wages. Not priority jobs for Lynn. Higher than average construction employment.	Very compatible with most other activities and public access. Good joint use potential.	Probably feasible.
Recreational and Public Open Space	High attraction for public to the waterfront. Primary access for people to the harbor.	Tax exempt but can generate increased return from adjacent property.	Little. Some maintenence work necessary by the city Dept. of Public Works.	Compatible with most activities except heavy industry. Offers potential for a connective walkway to varied harbor activities.	Probably feasible.

Criteria / Activity	1. Use of Waterfront	2. Tax rate Reduction (Dollars per 10,000 sq.ft. Of site used	3. Employment Impact	4. Compati-Bility With other Activities	5. Market Feasibility
Offices	Not dependent on waterfront but seeks waterfront as an amenity. High public generator but little attraction for boats.	2-3 cents	High employment intensity. 2/3 clerical jobs and 1/3 professional/ managerial. First priority for job strategy.	Very compatible with most activities. Potential parking conflicts with other uses. Good public access possible.	Unknown.
Research (Especially Marine Related)	Can be waterfront dependent if there is close connection needed between facility and sea water. Some boat activity possible, but little attraction for public.	Similar to Office space. (2-3 cents)	Average employment intensity. Most jobs are Professional/ technical at average wages. High constuction employment for some facilities.	Very compatible with most activities.	Unknown.
Housing Midrise to Highrise	Not dependent on waterfront but often seeks waterfront as an amentity. May generate boat activity & implies high "people" activity.	5 cents per 2 bedroom apt. of about 1,000 sq.ft. each. (Less as bedrooms increase).	Very little permanent employment. Above average construction employment.	Compatible with many nonoffensive industries. Some mixed use with light industry possible. Good public access possible if waterfront not privatized.	Unknown but growing more feasible as funding sources become available again.

Activities are preliminarily ranked here according to the following criteria: waterfront assets, tax rate benefits, employment effects, and public access compatibility (public proximity and involvement). It is difficult to make these rankings definitively because each specific development will differ in its requirements for site, labor, and security. For instance, a warehouse is not labor intensive but retail stores are. However, if a waterfront site is not suitable for any activity except warehousing, (because of location, orientation or proximity to another noncompatible activity), the question of making a development choice according to the labor intensive criterion is not applicable.

Based on the more detailed analyses found in Appendix IV and summary comments found at the end of this chapter, the following conclusions for harbor development can be drawn:

Activities that best meet the first community objective, that is, activities which draw on waterfront assets, can be preliminarily ranked in this order: visual activities that attract people such as a marina or commercial fishing venture; business/commercial uses that draw people who spend money such as seafood processing/fresh fish sales or boat using industry, miscellaneous retail stores, and restaurants; recreational and public open spaces; housing which offers the desirable amenity of watching waterfront activity; and tax rate beneficial activities which offer little or no public interest such as offshore oil support base, office space, research facilities, and last, warehousing.

Activities that have the most beneficial influence on the tax rate can be preliminarily ranked in this order: industry such as seafood processing; high density middle to upper income housing; and commerce and business such as restaurants, office space, miscellaneous retail stores and

research facilities. The items at the low end of the scale are warehousing, marina, offshore oil support base, and commercial fishing. These activities are not important to the tax rate either because of their temporary nature, (offshore cil support base), their lack of large quantities of land to assess for taxes (marina and ccmmercial fishing have minimal land requirements), or an activity which does not require prime waterfront land assessed at a high rate such as warehousing.

Ranking activities on the basis of their influence on employment is difficult, because the impact can vary greatly with the specific development proposed. However, the following list, in a general way, relates the activities to each other from the most employment intensive to the least: commercial uses such as office space, miscellaneous retail stores, and restaurants; industry such as seafood processing or offshore oil support base; and commercial fishing. Warehousing and marinas require relatively small staffs and activities such as housing and recreational open space require almost no full time staff persons.

Activities that are most compatible with public access and joint development must be ranked according to the degree of people involvement as well as the degree of security required to protect the activity itself. For example, observation of boats in a harbor is a popular pastime which makes a marina development a positive activity for the waterfront. But the marina itself will offer little access to the public. Its staff has a responsibility to the boat owners with craft moored in marina slips to protect and secure craft from people who could advertently or inadvertently cause damage.

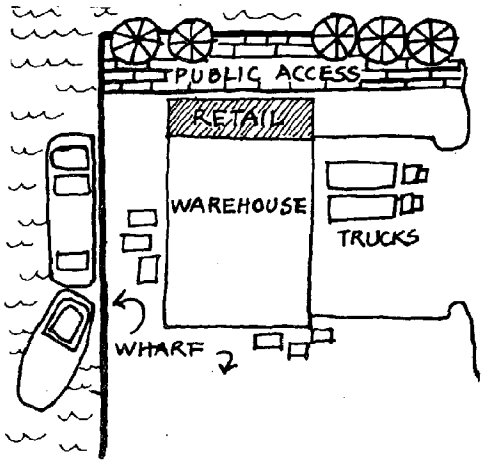
Another example is office space on the waterfront. While the activity itself may not offer direct access to the public, (office space itself will not attract visitors), it will locate a substantial number of people on the waterfront to make use of and encourage facilities for their use, to occur there.

Examples like these last two show why the ranking for public access may be somewhat misleading. From the activities offering the greatest public access to the activities offering the least, the preliminary ranking is as follows: recreation and public open spaces; restaurants and miscellaneous retail stores; research facilities; commercial fishing (watching offloading operations); office space; housing; and marina. The bottom end of the list has the most industrial activities which don't generally lend themselves to public access whether they are coastally or noncoastally located. These are: seafood processing or similar industry; offshore oil support base; and warehousing.

Some of the conclusions gleaned from these rankings are: No one activity, even if occupying a very large site, will mean a great reduction in Lynn's tax rate. Therefore, tax effects should perhaps be of lower priority for waterfront development than image and employment.

Because substantial marina demand exists (see chapter 10) and because increased boating could help to quickly create a more recreational, positive image for the harbor, and spur on other development, marina development--in a highly visible location--should be a high priority for implementation.

Seafood processing can be a viable activity for the Lynn waterfront. Commercial boat traffic will increase to serve the processing, with the greatest increases occurring in fresh fish rather than frozen. Truck traffic will also increase with processing, and, if a seafocd processing plant is proposed, Lynn should consider regulating allowable traffic increases. If a producer were to display, or at least make more visible, his processing operation to the waterfront observer, then processing ventures would be a more positive addition to the waterfront.



Warehousing has so few positive characteristics that only very limited building should be allowed directly on the waterfront. However, warehousing can be made compatible with the ambience of the waterfront if such facilities are combined with adequate public open spaces, pedestrian walkways, and miscelleneous retail stores.

Retail development on the waterfront should complement CBD shopping, not compete with it. Specialty shops, convenience stores and some food retail outlets (such as fish stores) are appropriate ventures for the waterfront. To maximize pedestrian participation and enhance the retail environment, parking requirements might have to be satisfied by locations adjacent to, and not directly on, the waterfront.

7

Policy and Implementation

Policy and Implementation

Policy objectives and implementation are often thought of sequentially; first policy objectives are defined, and once accepted, thought is then given to how achievement will occur. But such a separation of the two procedures is often fatal to the process. Because policy and implementation strategies have so much influence on each other, they should be linked to each other early in the planning process. While this does not assure success, it is the most practical and promising way to begin.

The following sections briefly discuss a working definition of policy, the range of public actions the city can take to implement policy objectives, and the question of uncertainty. Included in the implementation discussion are the following general policy recommendations for Lynn. Chapter Eight contains 21 specific policy suggestions and specific methods to implement each:

Broad Implementation Recommendations

1. Rezone the northern portion of the harbor from "industry" to "business";

2. Adopt a special harbor overlay zoning district;

3. Consider public development of pivotal improvements, such as a "waterfront walk";

4. Coordinate local development corporations to make local financing more available;

5. Initiate aggressive government-business revitalization actions and attitudes;

6. Improve regional media coverage of Lynn; and

7. Consider defining and promoting the private development of a major project on the northern harbor waterfront.

DEFINING A POLICY

What is a Policy?

Policy can be defined in numerous ways depending on the context or environment for policy making and its connection to administrative responsibility and mechanisms for implementation. The definition found most helpful in the Lynn context is "a set of objectives and a patterned set of actions aimed at the achievement of these objectives."[1]

Why Have Policies?

Articulating objectives and actions clearly can help elected officials and the community understand and coordinate their intentions and decisions in situations relating to the harbor. Thus, statements of policy exist in part to help make local government decision-making procedures uniform throughout and consistent with prevailing community values.[2]

Local governments make many types of decisions that can be influenced positively by the adoption of clear policies, for instance, those policies relating to day-to-day operations (city council permit approvals or work orders in the Public Works Department, etc.), those relating to the management of the government itself (the mayor's budget process, etc.), and those relating to planning and development decisions (capital facilities, social programs, or organization change).[3]

[1] Professor Alan Altshuler, M.I.T. lecture, February 14, 1977.

[2] William Solesbury, Policy in Urban Planning: Structure Plans, Programmes and Local Plans, Oxford: Pergamon Press, 1974, pp. 53-54.

[3] Kenneth L. Kraemer, Policy Analysis in Local Government: A Systems Approach to Decision Making, Washington, D.C.: International City Management Association, 1973, pp. 9.

As a first step then, articulating a clear public policy for harbor land use and development can focus the energies of the whole city structure on harbor improvement and development. Policy consensus can lead to the practical actions necessary to influence events in the harbor toward positive development.

IMPLEMENTATION BY PUBLIC ACTION

Need for Policy Consensus and City Council Adoption

Policy concensus, whether a formal adoption of policies by the city council or an informal public use of policies over time, is the first step in implementation. If agreed-upon harbor development policies are to be useful internally (to city departments carrying out day-to-day operations) and externally (for example, to the land developer wondering whether Lynn is the place for investment), their explicit adoption by the city council can be important. Similarly, formally adopting policies can later help the city council make objective decisions on individual projects for harbor development. As development alternatives are placed before the city council each can be judged against the same consistent set of development policies. Thus the council can begin to make explicit its attitude toward and intentions for the harbor.

Beyond assuring public agreement, the city can take specific actions to influence events and implement its land use and development policies. The city can take "regulatory actions" which prohibit certain responses and require minimum levels of performance from development initiated by others; or the city can act as a "change initiator" itself. In the latter role, the city can use its power to promote activities that meet its policy directives or it can use public money and land taking power to develop its own land and facilities.

Zoning Recommendations

Regulatory Actions:
The basic regulatory action used to implement specific policies is zoning. Zoning may be done by mapping and defining standard use areas (currently done in Lynn), or by instituting special district controls for some particular public purpose that overlap or replace existing use areas.

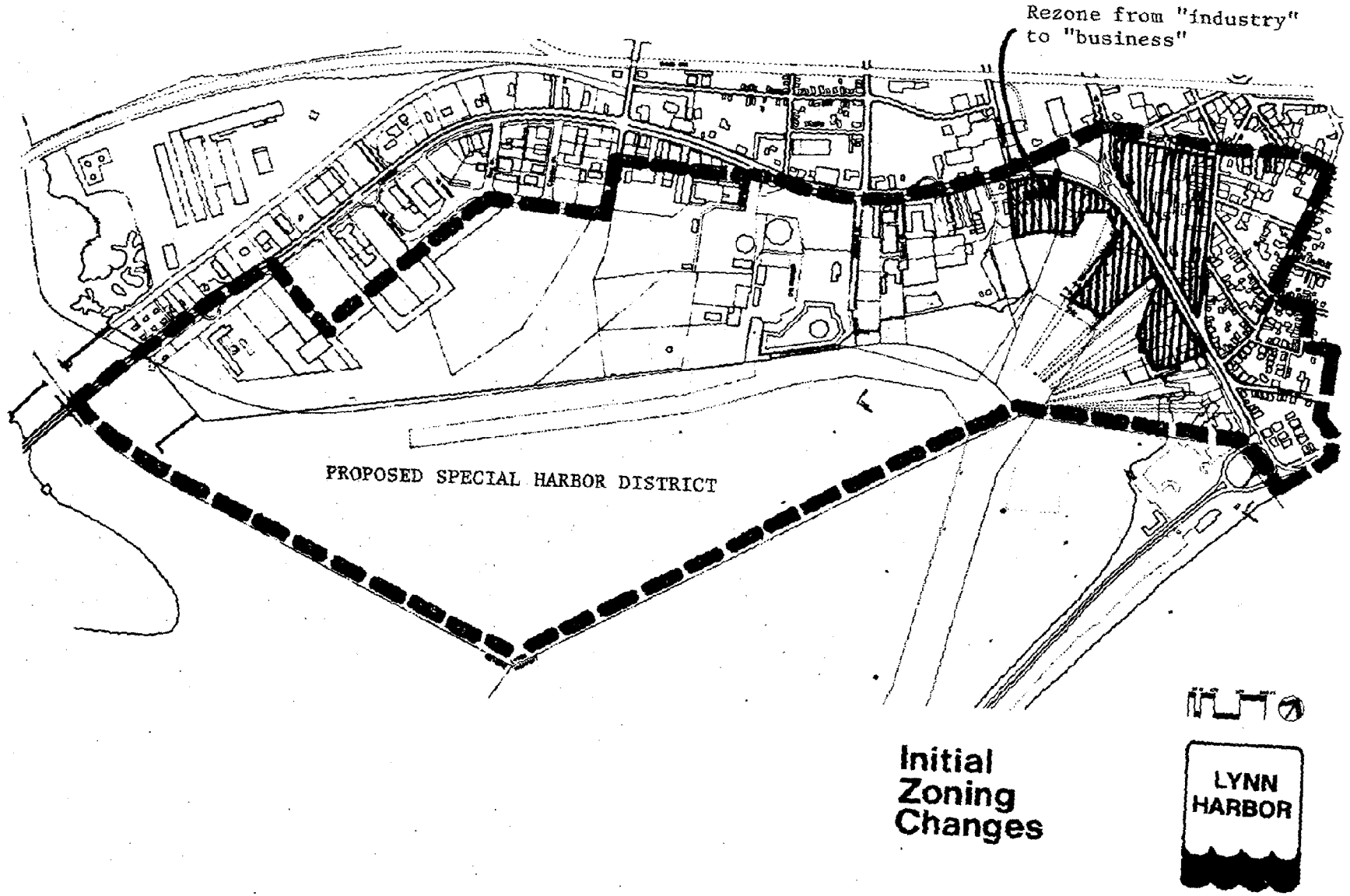
To change the character of the northern section of the harbor to retail, research, offices, and recreational uses the city must either rezone the existing heavy and light industry districts to a standard business zone or add a harbor use zone to the use classification, as was done in Cohasset.*

For simplicity, ease, and speed of implementation, Lynn should adopt the former approach. Along with this change, Lynn should establish an overlay Special Harbor District as shown in the map, Initial Zoning Changes. This district will establish the city's special harbor concerns within the entire harbor area, including the existing industrial zone.

Special Districts

Special Districts are created when the city believes the public interest requires increased or different types of intervention than are provided by standard use district controls. Most often, special districts have defined historic areas, special preservation or environmental controls, or flood plains, etc. However, other kinds of unique locations, such as the harbor, are good bases for special districts.

*The town of Cohasset added a Waterfront Business District to its existing zoning districts and defined the uses by right and by special permit, lot coverage, height regulation, and setbacks.


Rezone from "industry" to "business"
PROPOSED SPECIAL HARBOR DISTRICT
Initial Zoning Changes
LYNN HARBOR

The district can contain special controls, such as design review or guidelines, view easements, development incentives or special tax assessments, mandatory dedications, building height limits or guidelines, public access requirements, mixed use agreements, etc. A planned-unit development ordinance can also be applied to the special district, which may be sufficient to protect public concerns where and when it is applied. In any case, a special district can be tailored to the unique requirements of the harbor and will be in effect at all times.

Defining a special harbor district can, in addition, help the city receive special assistance grants for planning or making improvements (state coastal zone, federal economic development, H.U.D., etc.) or help the city receive special financing and insurance programs (H.U.D. flood plain insurance, or state redevelopment funds, etc.). Principally, the district designation will help Lynn because it will show that the city recognizes the harbor as an asset worthy of special attention and is taking positive steps to develop and protect it.

The City as Developer

City Initiative Actions:
The city can also bring change about more directly than merely regulating the activities of others. The city can act as its own developer, or it can act as a promoter for the private sector for specific development projects.

As a developer of parks, paths, wharfs, streets, etc., the city can make use of many resources. For example, within legal limitations the city has at its disposal: eminent domain for land assembly powers; city employee resources for design, management, and construction; and financial resources from general tax revenues, bonding authority, or federal grants. Lynn is not accustomed to using its resources for

development in such a highly promotional way; rather, the city has always concentrated on providing services for its existing population. But its promotional role in this situation would be to pinpoint one or more public improvements in the harbor around which a number of new activities and investments would coalesce.

Lynn should consider developing (by itself or in conjunction with the private sector) such improvements in the harbor district as a commercial wharf or a waterfront walkway (see Appendix V for possible funding sources and public-private cooperation ideas). Provision for public space is a critical and pivotal development because it seeks to invite Lynn residents to the harbor front.

The City as Promoter

As a promoter, the range of possible actions available to the city is even greater. In this role, the city would seek to sell the advantages of waterfront sites to potential private developers and investors. To aid such a program the city can use several techniques: tax arrangements, local financing and land assembly, development prospectuses, design proposals, promotional efforts, and the regional media.

Tax Arrangements

Special tax arrangements (through the granting of Chapter 121A privileges or special assessment letters of understanding) are often successfully used to entice development. But in light of Lynn's tax objectives and the public distrust of tax "deals", tax arrangements should be entered into only after a careful consideration is made of the advantages of the particular case.

To further promote development, cities can also make local financing dollars available to developers and help them

Table 7-1
Sources of Industrial and Business Capital

Sources of Capital	Use in Lynn
Business and Financial Institutions	Limited
Local Development Corporations (Three)	Limited
Venture Capital	None
Small Business Investment Company	None
Economic Development Administration Overall Economic Development Plan Accepted March 1976: Future Funding Pending Status of Sewer Treatment Plant	Pending
Industrial Revenue Bonds (Chapter 40D)	None
Small Business Administration	Active
Massachusetts Mortgage Industrial Finance Agency Effective November 1976	Active
Massachusetts Science and Technology Foundation	Active
Community Development Finance Corporation Effective Mass: November 1976	None

Source: Lynn Economic Development Office, Department of Community Development, November 1976.

assemble land parcels. The Department of Community Development has studied the financing situation in Lynn (see Table 7-1, and Appendix V for description of programs to assist private development) and recommends coordinating the fragmented and competing local development corporations (Lynn Municipal Development Corporation, Chamber of Commerce Development Corporation, Essex County Development Corporation and a proposed neighborhood revitalization development corporation). Coordination is essential to strengthen local financing, and these groups should be encouraged or compelled to present a united fund raising effort and to reach a consensus on a priority of the types of projects to be undertaken.

Local Financing

Land assembly power, also an important government tool, can promote development. Municipal eminent domain power can be used to acquire land for a "public purpose." And since "public purpose" does not necessarily mean "public use," eminent domain can be used to help any waterfront project deemed to be in the public's interest. However, eminent domain does mean some planned expenditure of city funds. Moreover, the public opinion of eminent domain land acquisition in Lynn is very low. This study recommends that eminent domain be considered only in special situations where a project considered desirable by a substantial majority would otherwise be delayed or made impossible.

Eminent Domain

A prospectus, another tool of city government, can promote a specific site or project by putting into one document most of the pertinent initial information a potential developer needs for a project. A prospectus reduces the time and energy costs a developer needs to invest on his own and helps mold his proposal to a form desired by the city. Information offered in a prospectus often includes:[5]

Development Prospectus

[5]The majority of this outline is taken from "Pickering Waterfront Site/Prospectus for Development," prepared by Skidmore, Owings and Merrill, Boston, Mass., 1975.

1. Background and area photos

2. Site location

3. Existing site conditions
   - Utilities
   - Subsurface conditions
   - Zoning
   - Site access
   - Site development potentials

4. Assessment of development factors
   - Market
   - Land cost
   - Site preparation
   - Parking
   - Scale

5. Special considerations
   - Design objectives for the area
   - Required easements and zoning flexibility
   - Accompanying public improvements

6. Illustrative development schemes

7. Contracts and submission requirements

The Boston Redevelopment Authority often uses this same technique with great success. The BRA usually prints a small number of copies (50-100) of their "developer's kit", which, after advertising, are paid for by developers. This process, rather than distributing them by general mail, minimizes cost and separates the more serious developer from the curious one.

Design Proposals

Either as part of a prospectus or independent of it, illustrative development schemes and design proposals are another

useful promotional tool for the city. Given some publicity, these ideas can expand both developer and public imagination of what is physically possible on a waterfront which has been ignored by almost all. Balance is important here though. If the city should raise expectations to an unrealistic height, public confidence in seeing real improvement could further diminish. The advantage of a detailed area design proposal is that it allows the average person to better comprehend the implications of a plan for an area than does a conceptual land use plan, zoning map, or any other document prepared for professional use.[6]

Improved city promotional efforts and media coverage are also necessary. The city must begin to present to the rest of the region a united front of business leaders and local officials committed to Lynn's improvement and prosperity. Lynn's slow population and economic decline have become self-fulfilling prophecies. But the decline can be turned around by a new commitment to cooperative and aggressive action.

Regional Media Coverage

Improved media coverage will combat a generally negative impression of Lynn as a place in which to live, to do business, or to invest. The regional media (rather than local), however, have much competition for news space. Normally, they will cover only events that are easy to cover, have some regional importance, or are particularly unusual or controversial. To improve positive regional media coverage of Lynn in general, the city should consider taking the following steps:

1. In combination with the Chamber of Commerce, the Mayor's office should have one person who has media experience and contacts to handle public relations and public information.

[6] Skidmore, Owings and Merrill, San Francisco, Urban Design Mechanisms for San Antonio, City Planning Department and Community Renewal Program, San Antonio, 1972, pp. 22.

2. Specific personal contacts should be established with one major reporter or editor (e.g., the regional city reporter) at the newspapers and at one or two television stations. Personal contact is a much better way to generate coverage than are news releases.

3. Special efforts, such as the Union Street Mall, harbor development and the Blue Line extension, should be brought to the attention of the wire services such as the U.P.I. When they pick up a story, it is distributed to smaller newspapers throughout the region.

4. A general promotional feature article about the city should be written by a freelance writer and submitted to local magazines like the Boston Magazine, New Englander, and Boston Globe's New England magazine, to name a few.

IMPLEMENTATION UNCERTAINTY

In taking action of any kind, the city faces the question of uncertainty: uncertainty about the accuracy of its analysis, assumptions, and predictions of how the market will really operate in the next few years, and uncertainty whether decisions made on the basis of its analyses are really the best decisions possible. To live with uncertainty, Lynn planners should bear several things in mind:

The "Harbor Plan" is Composed of Policies

1. Avoid planning for specific types of activities for specific locations in the harbor. Specific activities limit flexibility, are difficult to achieve, and may not be the best choices. For this reason, a harbor plan should be composed primarily of policies. Policies are

not meant to create inflexibility; in fact, they are meant to do just the opposite, that is, to guide public decision making over time, and to adapt to changes in the market, in public attitudes or the physical context.

Short Range Program of Actions

2. So that significant changes in the market and other factors can be adjusted for as they occur, public actions should be organized into short-range programs (one to three years). In addition, implementing short-range programs may themselves change the situation enough that the longer-range objectives that started the process may also need to change (e.g., will unemployment still be a critical problem five years from now?). Short-range programs also set priorities for implementation, (e.g., will a new zoning regulation be a more important accomplishment this year than a project prospectus for developers?).

Keep Iand Available for the "Right" Kind of Development

3. Keep as many use and land options open for as long as is practical; sooner or later there will be a general agreement on the appropriate use of the parcel or resources for its development. Three ways the city can increase decision time are:

   a. Allow only low intensity interim uses of the site which involve little or no capital investment by the user for buildings or by the city for services (e.g., storage, parking, exhibitions). This strategy may work against plans to rapidly improve the harbor's image but, if key parcels or projects that will stimulate adjacent investment are identified and developed, then the remaining harbor areas can be left open or be given over to interim uses until suitable proposals are made for them.

b. The city can keep land available by purchasing it and land banking it until such time as a suitable proposal is made for it. This action may also work against certain objectives, such as increasing tax return, but it begins to turn over harbor frontage to the city so that it has land to draw upon when the right proposal comes along.

c. The city can buy, trade, or negotiate the development rights to a parcel and hold them for a future development. This option costs less than outright purchase, yet gives the city control over development while continuing to collect property taxes from the existing user.

"Key Project" Approach

As noted above, the city can decrease its uncertainty, without the initial outlay of city funds, by aggressively promoting key projects. The following three observations underscore the seriousness of Lynn's situation and the necessity for concerted city action, such as the key project approach.

First, to improve the image and salability of the harbor, Lynn must take aggressive coordinated action or find itself at the mercy of regional economic competition from other cities and towns in the region and investment disinterest.

Second, given the great uncertainty in the area's future, its current neglected state, and questions about the long-term viability of the city, it is understandable that new private investment in the waterfront and adjacent areas is difficult to promote. These uncertainties add substan-

tial risk to any private project which will depend on a positive image and vital waterfront for its successful marketing.

Third, given the nature of the existing use pattern, parcel ownership pattern, and historical development of the waterfront, a major trend toward improvement must become evident if a change in the traditional patterns of use is to occur. Without a major push, land use on the waterfront will continue to be developed piecemeal and in a manner unrelated and nonsupportive of a new positive waterfront image.

8

Policy Recommendations

Policy Recommendations

The following policy recommendations are specific suggestions for an official city position on development in the harbor district. Some of the policies are controversial, therefore, they should be discussed publicly to clarify city intent and to arrive at some level of agreement. The policy statements are meant to initiate a discussion of the content, implications, and implementation of specific objectives for the harbor.

Policy statements can be organized in a variety of ways. The organization used here is one suggested by Solesbury: process of change, infrastructure, activities or function, environmental or "place" quality, and movement.[1]

The policies have been stated in a general form, "the city should ...."; however, in order to make policy intent clearer, final policy statements should identify the city office (mayor, council) or department (planning, public works, etc.) that will take responsibility for carrying out the stated policy. For successful implementation most policies will require the cooperation of several groups.

[1]William Solesbury, Policy in Urban Planning: Structure Plans, Programmes and Local Plans, Oxford: Pergamon Press, 1974, pp. 67-69.

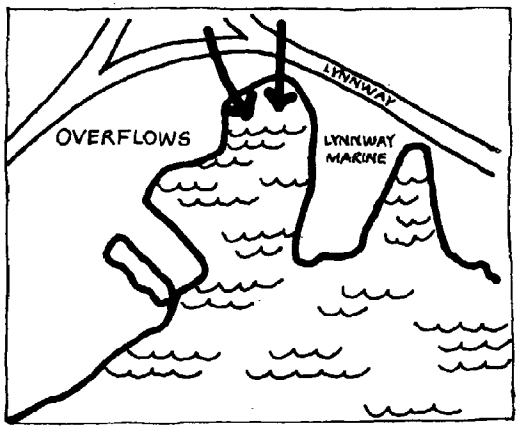
PROCESS OF CHANGE

Policy 1 In order to seek the counsel of the Lynn community and existing users of the harbor area and to achieve some public agreement on use of the harbor resources, policies should be discussed publicly (and amended if necessary) before being implemented or formally adopted by the City Council.

Implementation In order to broaden the opportunity for informed public discussion, the city should publish a set of policy intentions for the harbor and actively work with the existing Lynn community and citizen groups to clarify and refine these intentions. The Planning Department should take the initiative in seeking out citizen groups and soliciting their suggestions.

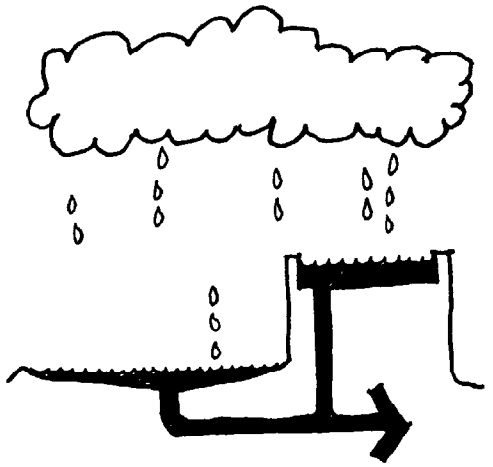
INFRASTRUCTURE

Policy 2 In order to improve long-term harbor water quality, the city should continue to separate the sanitary sewage system from storm drainage and take short-term steps, such as screening, to decrease the overflow in the north harbor where the least tidal flushing occurs.



The water quality of the harbor is related to the quantity of raw sewage discharged into it, especially during storms when the volume of water in the combined sanitary and storm sewer system necessitates some direct discharge of overflow. This overflow is likely to occur occasionally even with a new sewage treatment plant. Overflow is released into the tidal area next to Beacon Chevrolet and Lynnway Marine as well as at the main overflow outlet near the pumping station.

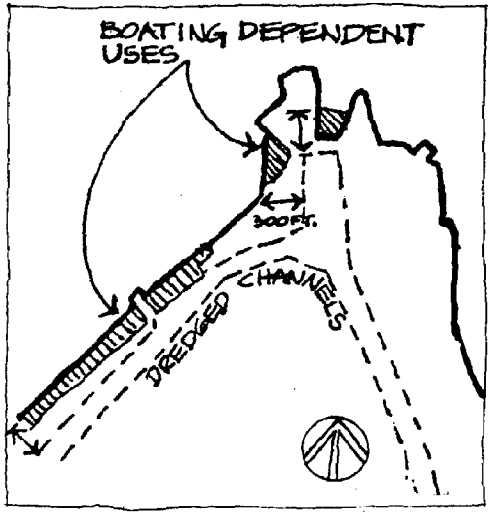
Implementation Within the proposed Special Harbor District all new development should separate storm runoff and sanitary wastes. To avoid pollution, especially petroleum or chemical based pollutants, storm-site drainage from waterfront parcels should be directed to the harbor only after precautions, such as filtering, have been taken.



The quality of drainage from individual sites allowed into the harbor can be based upon an acceptable standard. For parcels not on the waterfront and without access to a separate storm system, combining storm and sanitary wastes is acceptable until a city storm system is installed, provided some type of storm runoff storage, recharge, or delayed discharge system is constructed to avoid peak flows to the pumping station.

LAND SIDE ACTIVITIES

Policy 3 To increase the capacity of limited waterfront land to provide tax revenue, employment, and a captive market for associated uses, the city should encourage intensive use of waterfront sites by existing and new activities. If economical from an industry standpoint, the city should use all means available to facilitate increased use of the harbor for shipping by existing industries, such as Norelco or General Electric. New uses on vacant parcels should attract public interest or involve boating activities or should be activities with a high number of employees per square foot of land or a high volume of capital facilities per square foot rather than low intensity uses, such as open storage.



Implementation To insure intensive use of the waterfront, the city should specify some intensive uses by right in the harbor district and allow most other uses by special permit only. For example, water-oriented retail stores, restaurants, office, or marina space might be declared uses by right, while other uses, such as manufacturing, warehousing, etc. are allowed by special permit only. To control the adverse impact of increased traffic produced by intensive development, the city should limit the traffic generated from a newly developed site.

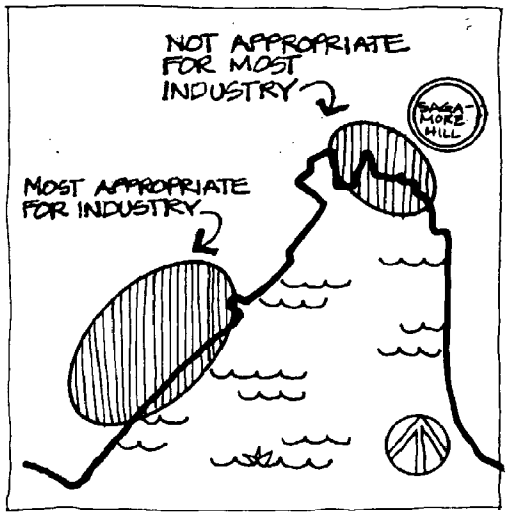
Policy 4 To capitalize on the harbor, the city should encourage water-dependent uses of waterfront land, specifically those uses requiring boat access (for example, fishing, fish processing, boat yards and services, cruise and ferry services, recreational boating, public access for water related recreation, tugboat services, barge shipping,

marine research, and education). Although the city recognizes that the present industrial demand for waterfront property is low and that other communities, including Boston, have available waterfront parcels, potential economic changes in fishing, oil production, and other unpredicted industries, suggest that the city give increased priority to long-term, water-dependent activities. In addition, since a limited amount of land on the waterfront remains from which the city can reestablish boating and shipping activities using the existing channels, nonwater-dependent uses of the waterfront should be acceptable only if they are short term and do not represent an irreversible commitment of the waterfront location to that use or they represent an overwhelming employment or tax advantage compared to a water-dependent use.

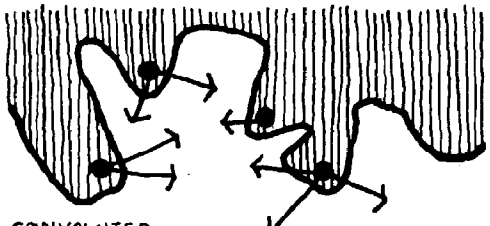
Implementation The city should specify channel-dependent uses, such as fishing wharfs, boatyards, tugboat services, cruise services, etc., as uses by right on any parcel located close to a dredged channel (perhaps 300 feet).

Policy 5 To lower the potential external nuisance effects of industrial development, the city should support only water dependent industrial development of land with navigable channel access and industrial zoning that is well removed from residential neighborhocds. Added auto and truck access from new industrial development should not create congestion problems.

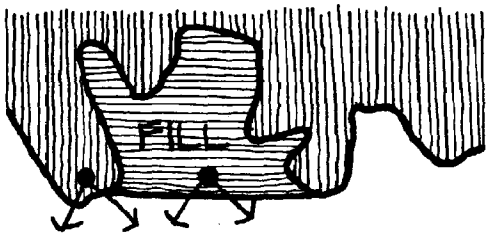
Implementation The northern part of the harbor is proximate to the Sagamore Hill residential area and should be rezoned from industrial uses to business uses to avoid industrial nuisance effects from industry development occurring there.



110 Policy Recommendations



CONVOLUTED SHORELINE IS VISUALLY INTERESTING



FILL MAKES SHORELINE LESS INTERESTING BUT MAY FACILITATE TIDAL FLUSHING

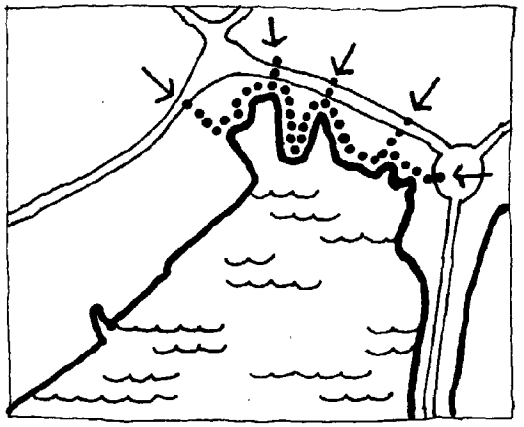
Policy 6 The city, as well as any state and federal agencies having jurisdiction, should review any proposed filling activity for its potential effect on harbor usefulness and quality.

Filling to create developable land has several consequences. On the one hand, filling can increase the amount of shoreline (as in a breakwater) to provide for increased boat access, protection, and visual variety, thus, making small land parcels more useful. On the other hand, filling can also destroy the visual variety of an irregular shoreline by straightening it. Another undesirable effect of filling convolutions is the depletion of boat mooring and maneuvering space. Finally, filling can affect tidal cleansing action.

Implementation To control filling activity within the harbor district, the city should require of any firm that wishes to fill in an area a special permit from the city council as well as from the appropriate state agencies. Possible criteria for granting special filling permits might include:

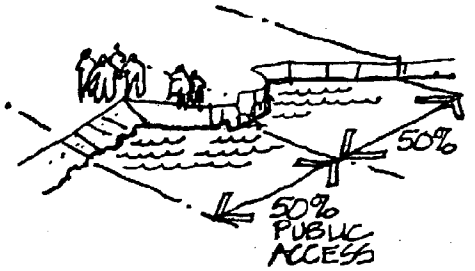
1. Filling is required to make a parcel usable by a water-dependent activity;
2. Filling is required to provide expansion for existing industry;
3. Filling will increase visual interest of the shoreline;
4. Filling will facilitate, or at least will not hinder, tidal flushing; and
5. Filling will not interfere with water areas currently used for recreational boat mooring or docking.

Policy 7 In order to increase the opportunities close to residential and business areas for physical access to the water, the city should seek to establish public access along the water's edge of north harbor properties (as indicated on the diagram). This access should be sought in new development, as well as with existing developments, and should be connected to other public areas such as the Lynnway.



Currently two points of public access to the harbor exist, one at the Metropolitan District Commission (MDC) pier and power company bulkhead for fishing, and one at the municipal landing on Blossom Street for fishing and small boat launching. Both these points are substantially removed from residential areas and the central business district and consequently do not attract many users and observers to the water's edge or support the adjacent commercial resources.

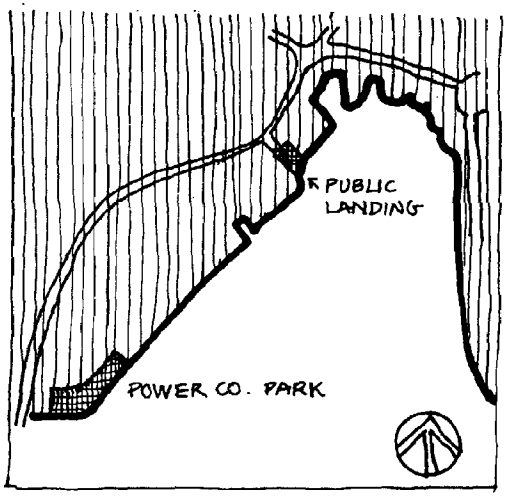
Implementation To protect the opportunities for public access within the Special Harbor District, waterfront activities should treat their land as public open space and keep at least 50 percent of the water's edge publicly accessible.



A public access easement (the water's edge and eight feet of property) should be made a requirement of any new use on the north harbor. Where new development is highly unlikely, the planning department should try to negotiate similar easements from existing property owners.

Policy 8 Open recreation areas offer the public valuable sources of enjoyment and appreciation of the harbor. Access to these areas, offers Lynn residents choices between picnicking and observing or more active pursuits, such as fishing and boating. To preserve the limited amount of

existing public access to waterfront recreation, the city should protect, help maintain, and seek to improve the existing open recreation areas on the harbor.



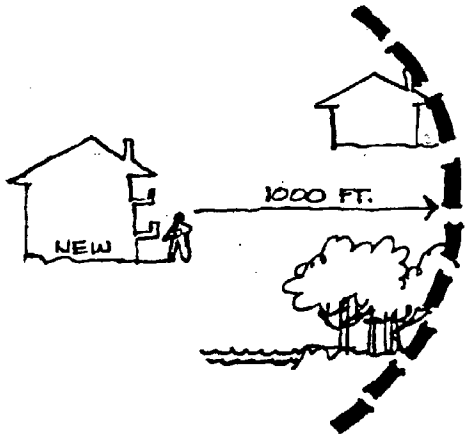
Implementation The primary recreation spaces on the Lynn side of the harbor are the Blossom Street public landing and the New England Power Company park at the Saugus River. If the city negotiates the repurchase of the power company parcels for development, the park area, or at least a major portion of it, should be maintained for recreational uses, even if the major portion of the property is industrially developed.

Holding ownership, the city can retain a portion of the property (for example, a strip 150 feet from the water's edge) as a city park and upgrade it if it wishes with city park funds, or the city can develop the strip for recreation jointly with the developer of the larger area; or the city can sell the strip to the developer with a recreation restriction. If resale of the whole property to the city does not occur, the city can still negotiate a permanent public access easement with the power company or encourage the developer to attach a conservation restriction on the recreation portion of it. Even without ownership, the city can encourage the power company to upgrade the area by demonstrating a willingness to cooperate however it can, for example, by increasing police supervision of the area.

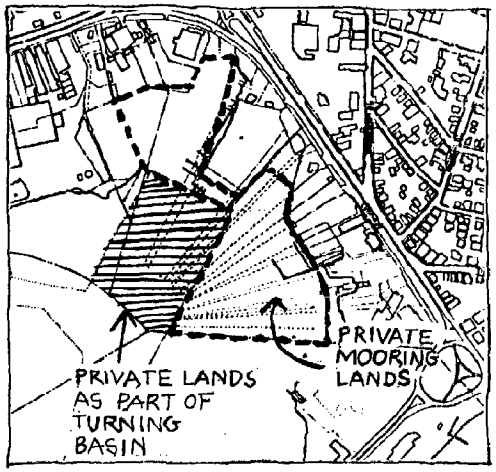
The MDC controls the public recreation area at the Nahant Circle. This area could be upgraded by integrating it better with the remainder of the northern harbor waterfront, i.e. linking public access on the waterfront with the MDC park. The city should support expansion of the boat-launching facilities at the MDC park, especially if the MDC decides to include better wind and weather protection of the

boat area. Such protection could benefit the harbor in other ways, such as increasing visual enclosure and enhancing the appeal of the harbor.

Policy 9 In order to maintain a residential presence close to the waterfront, to provide improved housing opportunities for Lynn residents, to attract new residents to Lynn, and finally, to help create a demand for waterfront restaurants and other commercial activities, the city should encourage housing development on the waterfront in parcels close to existing residential areas and recreation space and where traffic access does not create congestion problems.



Implementation Housing on the waterfront should be a use subject to a special permit based on simple performance standards, such as location near existing housing and recreation areas (within 1000 feet) at a density that does not significantly increase traffic on access streets over existing levels, etc. With the adoption of a planned-unit development ordinance, housing is, in effect, allowed by special permit. The above performance standards could be added to the Planned Unit Development ordinance.



WATER SIDE ACTIVITIES

Policy 10 The current use of privately owned underwater land is either for recreational boat mooring or for part of the dredged federal turning basin.

The city currently assesses owners of all these parcels a minimal amount for property tax purposes. Although an assessment of underwater land that can feasibly be used for mooring or docking activity is proper and should be continued or increased to a level that accurately reflects potential mooring income, the city should not assess land that cannot legally be used for mooring, such as in a navigable channel location.

Implementation The city council should direct the assessor's office to review underwater assessments.

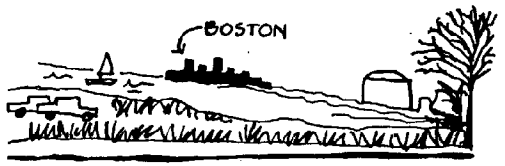
Policy 11 The harbormaster should document and regulate all mooring locations and boat tenants, and revenue from mooring on public underwater lands should be submitted to the city.

Implementation The city council should so direct the harbormaster.

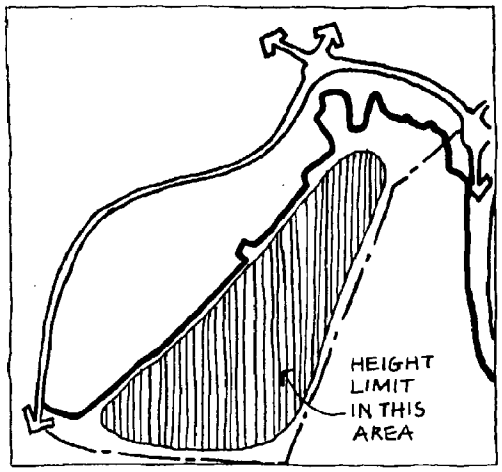
Policy 12 Because of potential conflicts between recreational boats and commercial vessels, marina development in the harbor district should be encouraged in highly visible locations apart from areas likely to be used for commercial traffic or port facilities.

Implementation To increase recreational boating in areas highly visible from the Lynnway and the central business district and to improve the boating image of the harbor, the city should promote the expansion of marina facilities in the north harbor cove area. The city could consider donating the use of its tidal flat parcel here, free of rent, if the Lynnway Marine activities were expanded.

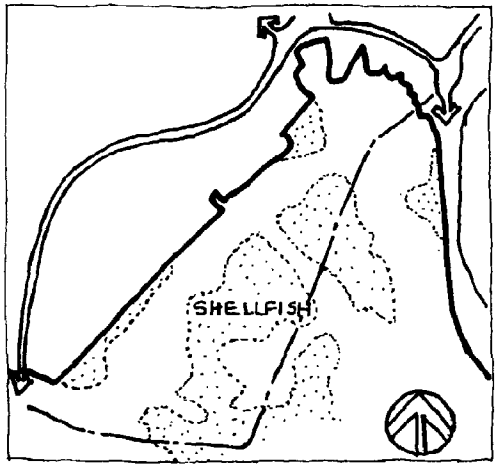
Policy 13 The great preponderance of underwater land and tidal flats within the harbor municipal boundary is owned by the Commonwealth. Although this area provides no revenue for the city, it does provide a great open space of water and, from some areas, long vistas of the Boston skyline. In order to increase revenue from this area, the city should encourage the development of low-scale, water-dependent uses such as boat mooring and landing facilities.



Implementation The ownership and control of Commonwealth harbor lands can be transferred to the city for development purposes. To protect panorama views across the harbor toward Boston, a height limit of one story (15 or 20 feet) above Mean High Water should be placed on general development in the water area of the harbor, excepting navigation aids and observation towers. All such development must protect water quality and tidal current flushing action in the harbor.

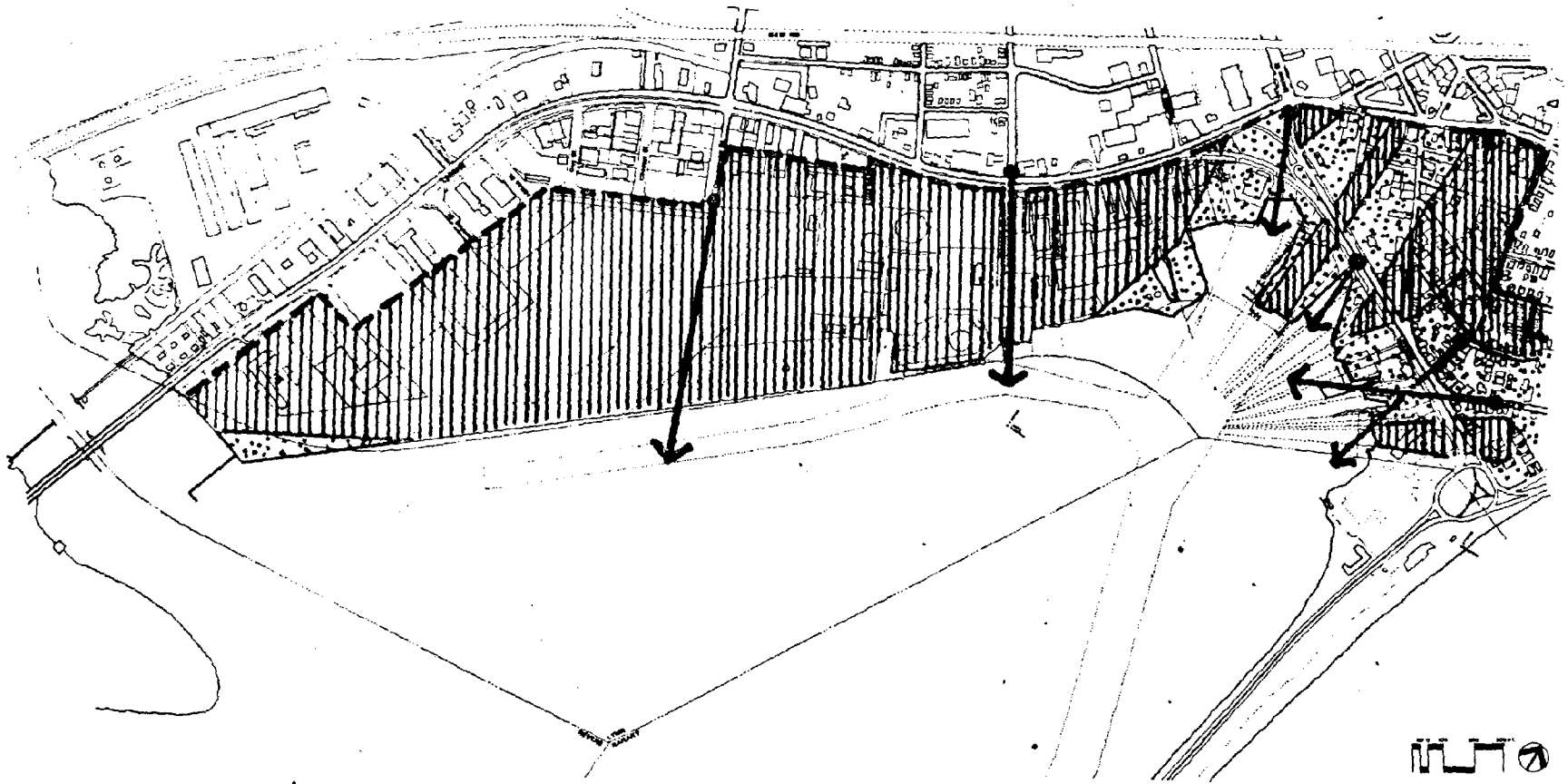


Policy 14 Some of the municipal tidal flats areas support shellfish beds which at the present time, because of poor water quality in the harbor and the shellfish varieties involved, are not heavily harvested. However, if the water quality can be improved, these beds could potentially provide a source of shellfish for increased local, though perhaps nct commercial, harvesting. At present the areas



can be used for harvesting sea worms as commercial bait, although the return to the city from such activity means little. In order to preserve some of the shellfish beds, physical development of the Commonwealth tidal flats should be limited to only a portion of the shellfish area.

Implementation Dredging applications to regulatory agencies (e.g. Waterways in the Department of Environmental Quality Engineering) for increasing mooring space in the harbor should be given strong city support, but such plans should be limited to only partial destruction of existing shellfish beds. The amount of shellfish habitat to be retained in consideration of the value of these areas as a state resource shall be determined with assistance from the state Coastal Zone Management Office.



Areas more sensitive to building height, massing, etc.

Areas less sensitive to building height, massing, etc.

Public views

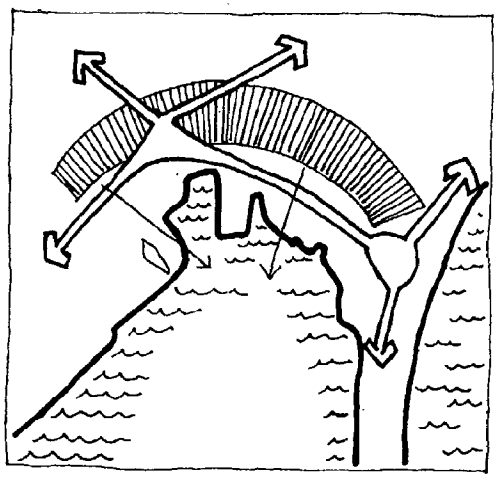
View Sensitive Areas

LYNN HARBOR

"PLACE" QUALITY

Policy 15 Part of what is attractive about active waterfronts is the diversity of activities that take place simultaneously on them. For example, recreational boating, commercial shipping, wharf activity, and observers all contribute to the ambience of a place which helps to attract even more observers and users to it. In order to stimulate the development of such diversity, the city should encourage a mixture of uses on adjacent sites and, where possible, the multiple use of individual waterfront sites.

Implementation The city can encourage mixed and multiple uses by granting density bonuses or incentives to developments of more than one use or by employing planned unit development within the harbor district.



Policy 16 To help adjacent areas enjoy views of the waterfront and thus to increase their own values, the city should insure that key views of waterfront activity (and limited distant water vistas) are maintained from important adjacent residential or new development areas and that the waterfront is visible from beyond direct waterfront sites.

Implementation To protect views of the harbor, the following steps, based on an analysis of alternative techniques the city can use to control view encroachment, are suggested below:

First, to make its objectives clear, the city should identify on a refined view sensitivity map (see map, View Sensitive Areas) the critical locations of public views and potential views from adjacent property.

Second, to protect view locations from encroachment in the near future, to keep the city's options open and to maintain development incentive, a low (20-25 ft.) height limit should be established in the northern harbor portion of the special district, but with provisions for special permit exceptions based on certain criteria, such as view impact, height sensitivity, site design, and building massing. Examples of such criteria are:

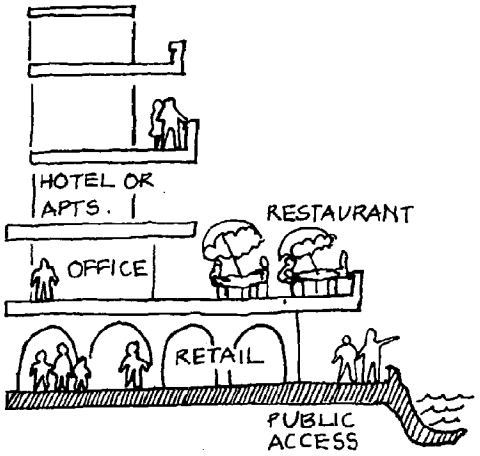
a. A requirement for "visual permeability" in new development. Permeability can be assured by confining development to a total of one-half site width or by requiring ground level openings through the development equal to one third to one half the average site width.

b. A siting requirement that primary and tall building masses be oriented with their long dimension approximately perpendicular (rather than parallel) to the general waterfront edge in order to minimize any walling effect of the harbor edge. Individual building design can maximize views within this constraint.

Third, to protect views for perpetuity that are deemed important for public enjoyment of the harbor, such as views from streets to the water, the city should purchase development rights (view easements) before the land is developed. This sale could be negotiated or imposed by use of eminent domain powers.

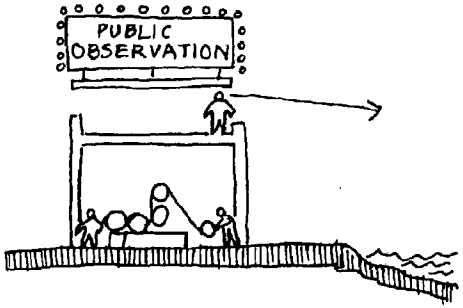
And fourth, as soon as is practical, to protect views across land between public properties and the water, the city should encourage developers of existing buildings (such as the shoe loft structures) or new office or residential buildings to purchase view easements. This purchase is a

way to protect those views in the long term, rather than to trust their protection to discretionary design review or special permit decisions.

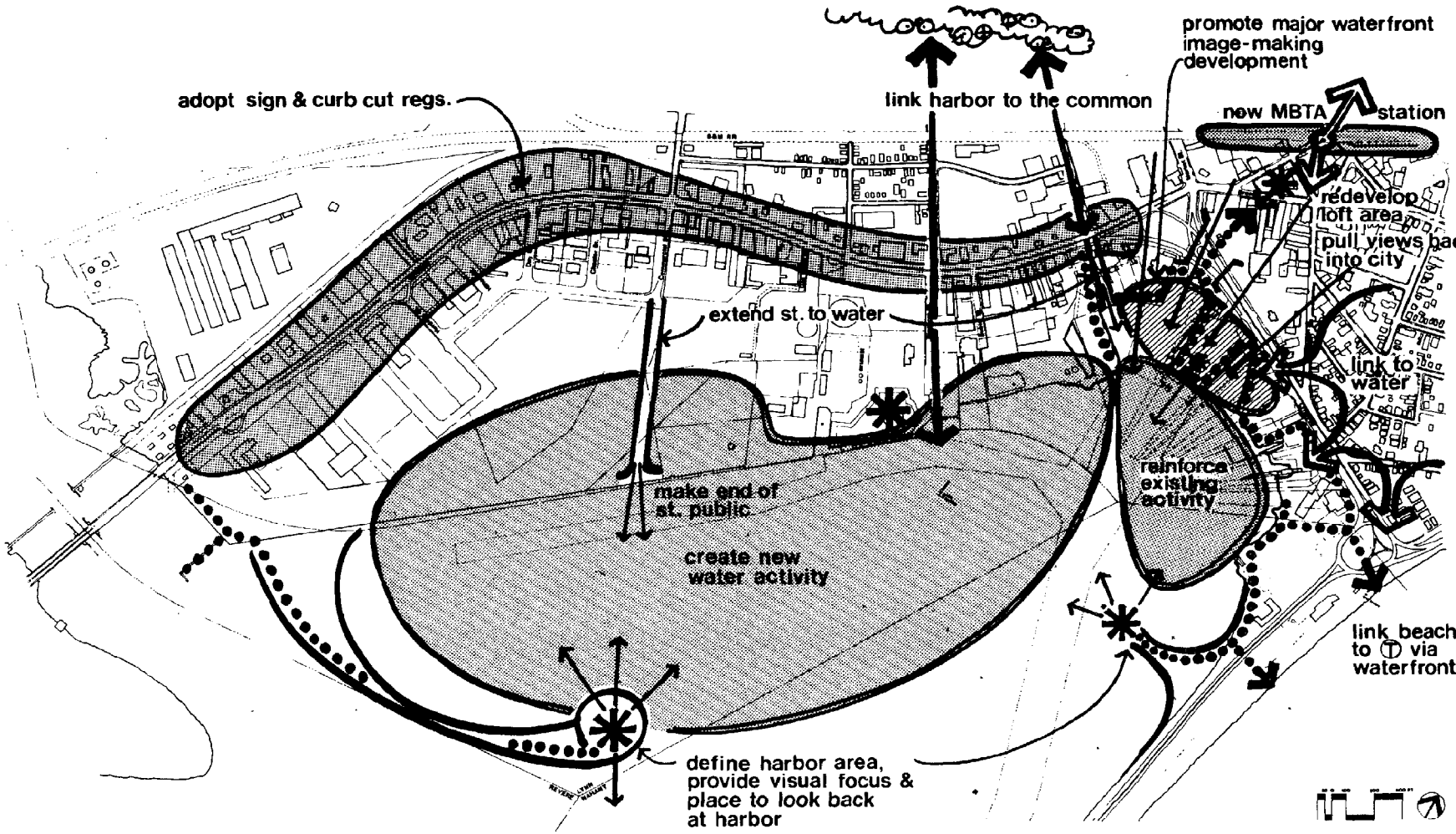


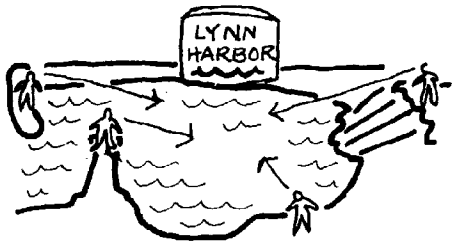
Policy 17 To augment and capitalize on views of waterfront activity and to increase public awareness of the harbor, the city should encourage commercial uses that are complimentary to the waterfront and bring people to it. Examples of such uses are: restaurants and fast food outlets with facilities oriented to the water, a hotel, a marine research office space, retail shops, fish markets, etc. The city should discourage commercial strip automotive uses on waterfront land, such as gas stations, auto sales, etc.

Implementation Uses that are not water dependent, that do not draw people to the waterfront, or that are of open storage in character (other than boats) should be specifically banned from parcels within 400 feet of the waterfront. To help Lynn residents become more aware of the harbor, the city can encourage special activities on the waterfront. Examples of such uses are: fishing contests, clean-up campaigns, school marine biology field trips, local television coverage, improvement suggestion campaigns, etc. The city can also prepare a simple boosterism poster or a map of harbor access points and view locations.



Policy 18 Providing eye-catching views of the harbor is a primary means of attracting users and observers to the harbor area. Views are most intriguing when they can be made from a variety of vantage points. A high building or promontory, a spit of land, a partial enclosure, or a place to look back at the harbor all can become memorable viewpoints. Because the harbor has few such places at present, the city should strive to preserve existing views from high places and encourage new and unusual vantage points.


promote major waterfront image-making development
adopt sign & curb cut regs.
link harbor to the common
new MBTA station
redevelop loft area
pull views back into city
extend st. to water
link to water
reinforce existing activity
make end of st. public
create new water activity
link beach to Ⓣ via waterfront
define harbor area, provide visual focus & place to look back at harbor
Provide public access
New or improved landmark/lookout
New views needed
Image Development Guidelines
LYNN HARBOR



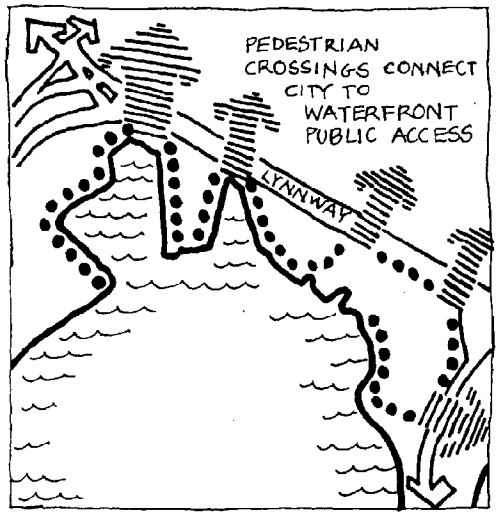
Implementation To enhance the opportunity for memorable views of the harbor, the public's access to rooftops and other observation areas on private property might be secured by rewarding the owners of new developments with small increases in building density for new projects or granting the owners of exisitng development small tax abatements.

Policy 19 Currently, the harbor has a limited attraction for visitors. It is not a "place" to which a person is drawn. To improve the harbor's magnetism, the city should insure that new development be sensitive to the Image Development Guidelines illustrated on the next page. For example, by designating landmarks and establishing water boundaries that create a greater enclosure of the harbor, the city can make the identity of the harbor and waterfront areas sharper and more memorable. The city should also support these kinds of additions when made in development proposals.

Implementation To increase the visual closure of the harbor and to increase shelter for recreational boating or commercial docking operations, the city should promote the building of a peninsula or breakwater as part of the development of the New England Power Company site. To give the residents of the city an emblem with which to identify a revitalized harbor, the city should sponsor a local contest to develop a harbor symbol, and then persuade Boston Gas to paint the winning symbol on its white LNG tank in the harbor.

MOVEMENT

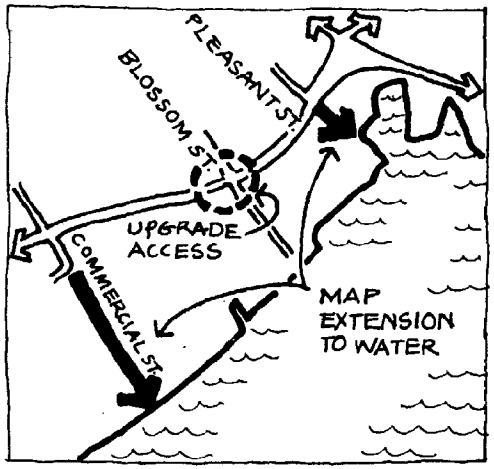
Policy 20 The lack of generous and safe access to the harbor side of the Lynnway is one of the major hindrances to pedestrian movement in the harbor area. The speed and volume of traffic on the Lynnway aggravate the absence of adequate pedestrian crossing locations. In order to improve pedestrian access to the harbor from residential areas and from the central business district, the city should provide improved and increased pedestrian crossings that lead to public access locations on the waterfront.



Implementation To improve the automotive and pedestrian access to the harbor, a summary report should be done or press coverage collected on the dangerous pedestrian and automotive-truck access points on the Lynnway. These might serve as an added inducement, in addition to the city's requests, to the Metropolitan District Commission to study improvements to the situation.

Policy 21 The harbor waterfront is physically, visually, and conceptually isolated from the rest of the community by its disconnection from the existing street network and by its walled-off position behind the Lynnway's traffic, median strip, and stop light arrangement. Therefore, where possible, the existing street system should be extended to the water's edge. To improve vehicular access, to make getting off and across the Lynnway easier, the Lynnway should be studied and changed.

Implementation The city should redesign Commercial Street and Pleasant Street, so they continue to the waterfront. This will require that the city compensate the existing owners for the loss of their development rights but not for



the purchase of the property until the streets are actually built. The Commercial Street extension should probably wait until the city repurchases the New England Power Company parcel, so that the mapping does not entail a city expenditure.

Commercial, Blossom, and potentially Pleasant Streets should be considered for improved access across the Lynnway; after consideration, the city should transmit final recommendations to the MDC.

9

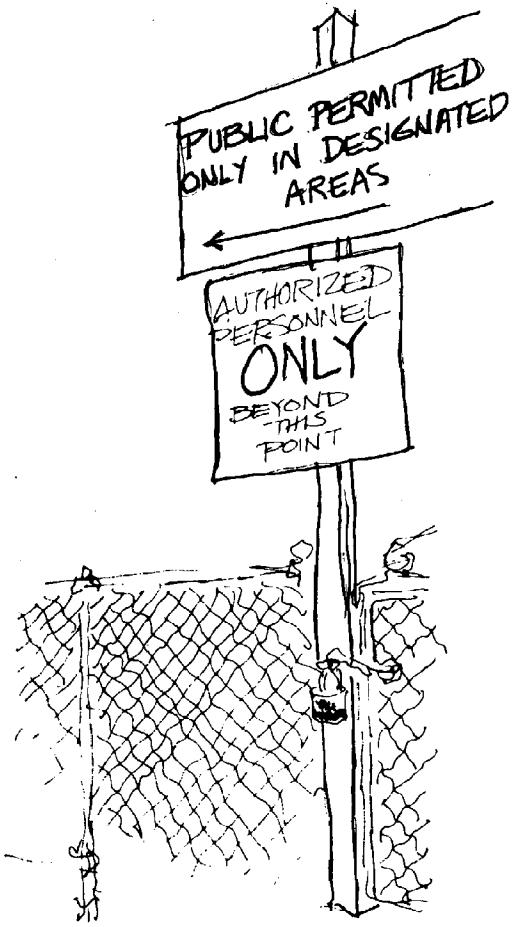
Coastal Zone Management

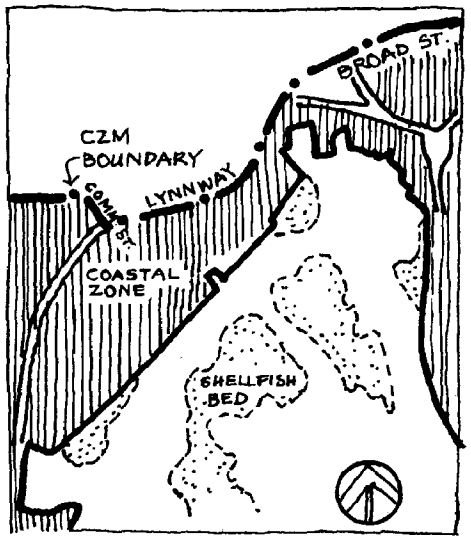
Coastal Zone Management

The Massachusetts Coastal Management (CZM) Plan is a new state-regulated program administered by the Massachusetts Office of Coastal Zone Management (Mass. OCZM) within the Executive Office of Environmental Affairs (EOEA). Lynn and all other communities within the designated coastal zone will be confronted with some critical choices about coastal related development. Since the Plan is still in the process of being developed, Lynn can influence the way the Plan is administered and the requirements for receiving state resources in the form of economic aid and technical assistance.

This chapter looks at the CZM program and its origins, compares the "port" and "developed harbor" definitions (as well as some special assistance designations) provided by the state CZM Plan, and considers the appropriateness of these different designations to the City of Lynn. Issues considered include: what level of activity Lynn harbor is capable of supporting, and whether the specific CZM Plan designations themselves are misleading. A suggested plan for Lynn pinpoints the way the city can best take advantage of the program as set forth by Mass. OCZM.

The ultimate effect of CZM policies on Lynn's development may take several courses. CZM policies may be so weakly implemented that they have little effect on coastal communities; by adding another level of state bureaucracy, they may





make local initiatives more difficult; or CZM policies may go a long way in helping to implement local policies. Indeed, what effect the program will have will depend as much on what initiative the communities themselves take to offer suggestions and to influence the coastal discussions as by legislative fiat. For instance, Lynn should consider questioning the designation of most of the tidal flats in the harbor as significant resource shellfish beds. Designating them as such will make dredging permits that much harder to get. Yet while the shellfish beds currently yield no usable harvest because of their contamination, dredging for commercial or recreational activity may be desirable. Lynn should work for CZM policies that expand harbor development options, in the event that CZM is strongly implemented. In any event, Lynn should be aware of the different resources available to them within the context of the various designations.

ORIGINS OF THE COASTAL ZONE MANAGEMENT CONCEPTS AND STATUTES[1]

The Federal Coastal Zone Management Act of 1972 (P.L. 92-583) is what gives each state the jurisdiction to institute a state plan. The Declaration of Policy is as follows:

> Sec. 303. The Congress finds and declares that it is the national policy (a) to preserve, protect, develop, and where possible, to restore or enhance, the resources of the Nation's coastal zone for this and succeeding generations, (b) to encourage and assist the states to exercise effectively their responsibilities in the coastal zone through the development and implementation of management programs to achieve wise use of the land and water resources of the coastal zone

[1]Basic information for this summary of coastal zone concepts is taken from the Massachusetts Executive Office of Environmental Affairs, Massachusetts Coastal Zone Management Preview, A Program for Preliminary Review, November 1976.

> giving full consideration to ecological, cultural, historic, and aesthetic values as well as to needs for economic development, (c) for all federal agencies engaged in programs affecting the coastal zone to cooperate and participate with state and local governments and regional agencies in affectuating the purposes of this title, and (d) to encourage the participation of the public, of federal, state, and local governments and of regional agencies in the development of coastal zone management programs. With respect to implementation of such management programs, it is the naticnal policy to encourage cooperation among the various state and regional agencies including establishment of interstate and regional agreements, cooperative procedures, and joint action particularly regarding environmental problems.[2]

Mass. OCZM was charged with the task of preparing the planning document that will be submitted for federal approval. Some of the preliminary statistics the office has compiled are:[3]

---Forty percent of Massachusetts residents live in the designated coastal region;

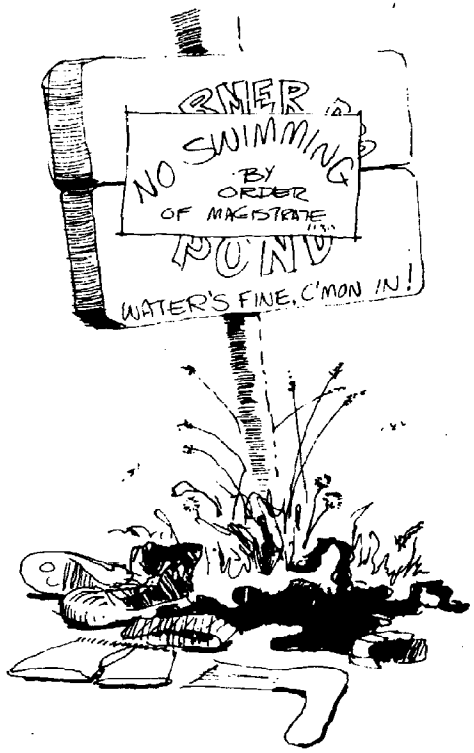
---More than one-half of all current development in Massachusetts occurs within the designated coastal zone; and

---Three-quarters of all energy supplies enter Massachusetts through an urban port.

The concept that the coastal zone is a fragile environment grew out of the environmental movement of the last decade.

[2]Bureau of National Affairs, Government Printing Office, Washington, D.C.

[3]Massachusetts Executive Office of Environmental Affairs, Massachusetts Coastal Zone Management Preview, A Program for Preliminary Review, November 1976, Sec. 1, pp. 11-12.



Rachael Carson, among other contemporary writers, focused public attention on the years of accumulated damage that many competing user groups, industrial and recreational, had inflicted on coastal areas. The plight of the coastal zone was recognized as serious as early as the 1950's and 1960's, but few legal or administrative mechanisms existed to direct or regulate development in the coastal areas.

Two national studies, "National Estuary Study" and the "Our Nation and the Sea", provided the basis for national coastal zone management legislative proposals.[4]

The "National Estuary Study" documented the magnitude of the damage done to the coast, and "Our Nation and the Sea" proposed that state coastal zone authorities be created to plan, regulate, acquire land, and develop public facilities. The latter study further recommended that responsibility for implementing the program be given to the then proposed National Oceanic and Atmospheric Administration (NOAA).

Shortly after the issuance of "Our Nation and the Sea," bills incorporating its recommendations were filed in Congress, and in 1972, Congress passed the Coastal Zone Management Act (CZMA). The Act allowed for individual states to establish coastal authorities and to develop management plans. The management plans were to identify the boundaries of the coastal zone, compile site inventories, designate areas requiring special assistance for development or conservation, and establish the uses that related to coastal areas and had some impact on them. The states were instructed to establish priorities for different uses in coastal areas and to implement policies that better organized future uses and protected coastal areas from abuse.

[4]U.S. Department of the Interior, Fish and Wildlife Service, Bureau of Sport Fisheries and Bureau of Commercial Fisheries, National Estuary Study, Washington D.C., 1970.

U.S. Commission on Marine Science, Engineering and Resources, Our Nation and the Sea, Washington, D.C., 1970.

After the passage of the 1972 CZM Act, Massachusetts began to utilize this planning power and to become eligible for federal funding. The State established the Office of Coastal Zone Management (Mass. OCZM).

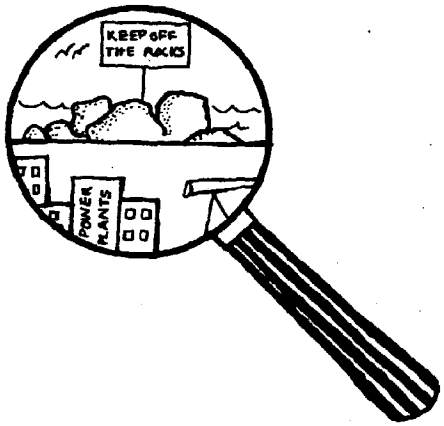
Early on in the planning process, a Governor's Task Force and a series of citizen's advisory committees (CAC) were created to review and respond to the efforts of Mass. OCZM and to provide a vehicle for local participation. The task force, representing all levels of government and different private coastal interests, established a set of goals to guide CZM activities.

The seven CAC's, each representing a section of the coast, met on a regular basis. They submitted comments on the Plan in general and defined the values and priorities for each regional chapter of the plan. The CAC's acted as a "....final check on the values and perspectives underlying the Massachusetts coastal zone effort...."[5]

The Mass. OCZM, after reviewing the comments, made changes and submitted the definitions as part of their total program to the federal OCZM for review. This document, known as the Preview Document, was released for review in November 1976.

When, after review, the definitions are published in their final form, they will be subject to an environmental impact review. Even at this stage in the decision process, the definitions can be changed. However, once the impact statement is approved, changes in the definition can occur only through an amendment to the CZM Plan.

[5]Massachusetts Executive Office of Environmental Affairs, Massachusetts Coastal Zone Management Preview, A Preliminary Program for Public Review, November 1976, Sec. 1, pp. 19.



CZM POLICIES PERTAINING TO LYNN

In order to effectively organize a coastal zone study (which led to the Preview Document) Mass. OCZM disaggregated the study into a series of policy areas: marine environment; coastal hazards; visual environment; ports and harbors; recreation; and energy. Within each area, resources and uses were identified and studied. For example, in the Marine Environment section, categories such as salt ponds, barrier beaches, rocky shores, power plant siting, hazardous substances, and sand and gravel mining were examined. Policies and the means to implement the policies were set forth for each area and its components, and these and the recommendations, in turn, were then reviewed by CAC's.

Within each broad policy area, CZM findings and policy proposals that may most affect harbor development in Lynn have been identified. These are listed below and can be found in Massachusetts Coastal Zone Management Preview, A Program for Preliminary Review.

Marine Environment

1. Ensure that existing water quality standards for all point source discharge activites are stringently enforced and that the standards are continually upgraded to achieve the highest possible conformance with federally promulgated water quality criteria.

2. Ensure that dredging and disposal of dredged material minimize adverse effects on marine productivity.

Coastal Hazards

3. Prevent further growth and development in high hazard areas and preserve natural buffers throughout the coastal zone.

Visual Environment

4. Incorporate visual concerns into the early stages of the planning and design of facilities proposed for siting in the ccastal zone. Establish a design review process for development that is of regional, state, or national concern.

5. Provide funding or technical assistance to communities and local conservation commissions for developing local zoning and land use controls which will improve visual access and the compatability of proposed development with existing community character.

6. Expand visual access in urban areas and provide views of coastally dependent activities with significant educational or interest value.

Recreation

7. Improve public access to coastal recreation facilities and alleviate automotive traffic and parking problems by improving public transportation.

8. In addition to expanding major access, link existing coastal recreational sites to nearby coastal inland

facilities, via trails for cyclists, hikers, and equestrians, and via rivers for boaters.

9. Increase capacity of existing recreational areas by facilitating multiple uses of sites and by improving maintenance. Resolve conflicting uses whenever possible by improving management, rather than by excluding uses.

10. Facilitate expansion and improvement of private recreational facilities and sites that provide public coastal access.

Energy

11. Maximize use of existing marine terminal capacity.

12. Discourage siting of tank farms on the coast.

13. Accommodate new base load LNG facilities or additional LNG deliveries where and when the risks to public safety and the environment are minimized.

14. Consider siting of electrical generating facilities in noncoastal areas.

Ports and Harbors

15. The most severe competition for waterfront space is in ports and harbors with channels 20 feet deep or more and supported by a developed infrastructure system (transportation links and utilities). Such ports are an important state resource.

16. Deepen channels and expand mooring or turn-around basin space when essential to waterfront-dependent uses of particular state economic importance, e.g., fisheries, maritime shipping, and marine industry.

17. Encourage water-dependent industrial development in port areas. Deter preemptions of present and proposed water-dependent industrial uses by favoring the use which is the more limited in its physical or economic options. Permit nonwater-dependent industrial uses when such use would not preempt forseeable water-dependent industrial uses.

18. Promote the widest possible public benefit from port and harbor and channel dredging and ensure that such proposals are consistent with marine environmental policies.

19. Encourage, through technical and financial assistance, the expansion of water-dependent uses in port areas and developed harbors where the risks of damage to the marine environment are minimal.

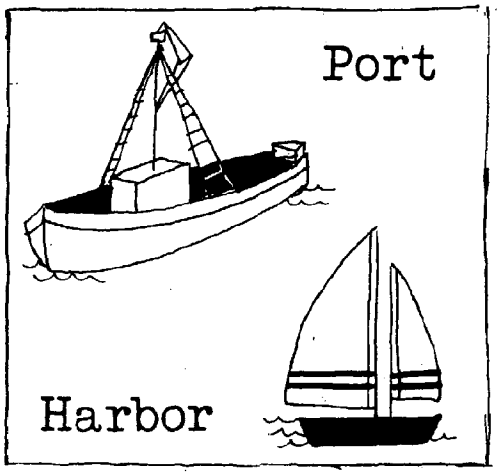
20. Encourage urban waterfront redevelopment and renewal in develcped harbors in order to link residential neighborhoods and commercial downtown areas with physical and visual access to the waterfront.

PORT VERSUS HARBOR DESIGNATIONS

Under Coastal Zone Management policies, the City of Lynn has the choice, within certain specifications, of designating itself as either a port or developed harbor. Port use and harbor use imply two generically different types of activity, and the city of Lynn needs to be aware of the ramifications

of each designation. Lynn Harbor has a long history of active port commerce and the adjacent waterfront area is still zoned for heavy industry, which suggests a desire for port activity, yet, the fact that the harbor is currently inactive and supports no water-dependent industrial activity seems to suggest that a port designation may be inappropriate.

The next sections look at port and harbor designations in detail, and how they might influence Lynn's future development plans. The background and origin of the port and harbor classification scheme is discussed first; then the definitions and policies that relate to each designation are detailed.



ORIGIN OF THE HARBOR AND PORT CLASSIFICATION SCHEME

Regarding the management of ports and harbors with respect to the coastal zone, the federal Coastal Zone Management Act provides little guidance for individual state offices of Coastal Zone Management. The federal Coastal Zone Management Act indirectly addresses ports and harbors in very broad terms:

> The key to more effective protection and use of the land....is to encourage the states to exercise their full authority....in developing land and water use programs for the coastal zone, including unified policies, criteria, standards, methods, and processes for dealing with land and water use decisions of more than local significance.[6]

[6]United States Codes Annotated 16, Sec. 1454.

Forced to face this issue more directly, the Commonwealth, after discussion with citizen groups, arrived at several

conclusions about ports, harbors, and their associated activities.

---Water-dependent activities require ocean access and must be situated on the coast.

---The greatest competition for desirable harbor frontage occurs in ports having navigable channels of 20 feet or more and a developed onshore transportation structure.

---Because the coast is a small percentage of total land area nonwater-related uses should be sited elsewhere.

---Currently there are too many underutilized ports and harbors in Massachusetts, and the Commonwealth is hesitant about developing new ones. This also concurs with the Massachusetts Growth Policy, which calls for growth to occur in areas already developed, and results, in part, from acknowledgment of the fragile ecology of the coast. The Commonwealth notes a firm desire to leave a significant portion of the coast undeveloped and in its natural occurring state.[7]

---The decision not to create additional ports and harbors will prevent further disaggregation of the market. It is desirable to cluster marine-associated business in a few concentrated places. This will make the demand large enough to support larger operations that are not profitable without a large and concentrated consumer market.

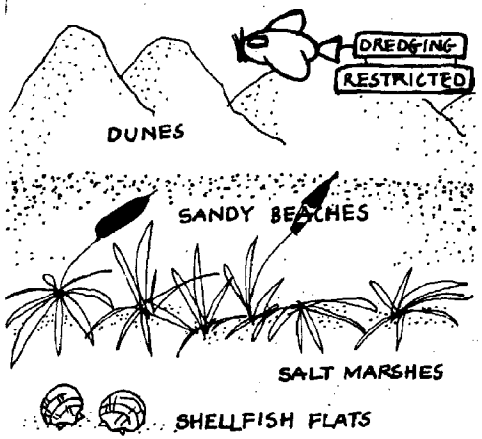
After reviewing the above assumptions and conclusions, State policy makers formulated a series of policies. Some of the policies pertain to ports and harbors; some to ports alone; and some to harbors alone.

[7]Massachusetts Office of State Planning, Towards a State Growth Policy, Boston, Mass., 1975.

CZM POLICIES THAT AFFECT BOTH PORTS AND HARBORS

CZM policies that effect both ports and harbors are primarily measures that permit the Commonwealth to control and maintain uniform procedures for water development. Because of limited funding, the Commonwealth must decide among competing projects based on what projects will have the largest "public benefit".

The Massachusetts OCZM defines public benefits as reductions or abatements of naturally occurring damages to public and private property (e.g., annual flooding), the elimination or mitigation of a public nuisance or safety hazard, and recreational or economic benefits from dredging.



Regarding dredging in particular, the federal government controls most of the available funds for it, but the national CZM act requires that all federal actions be reviewed by the state OCZMs to assure agreement with state plans. Therefore, by regulating dredging permits, the Commonwealth can insure that its policies are implemented. This, of course, is a major control device for the Commonwealth. Additionally, after federal approval of its funding, Mass. OCZM will provide money for studies of environmentally sound dredging techniques.

Dredging projects are ranked on the basis of need, public benefit, and environment damage. Maintenance dredging in previously dredged areas is permitted and has the highest priority for public assistance funds. Dredging is restricted in salt marshes, dune areas, barrier and sandy beaches, and shellfish flats. To deepen or expand channels, moorings,

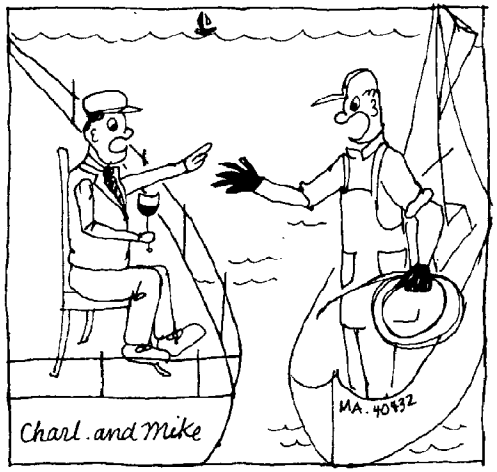
and turn-around basins, communities must demonstrate that dredging will meet the following criteria:

1. Provide regional public benefits for recreational boating and resolve harbor conflicts between fisherman and recreational boaters;

2. Enhance benefits to the commercial fishing industry;

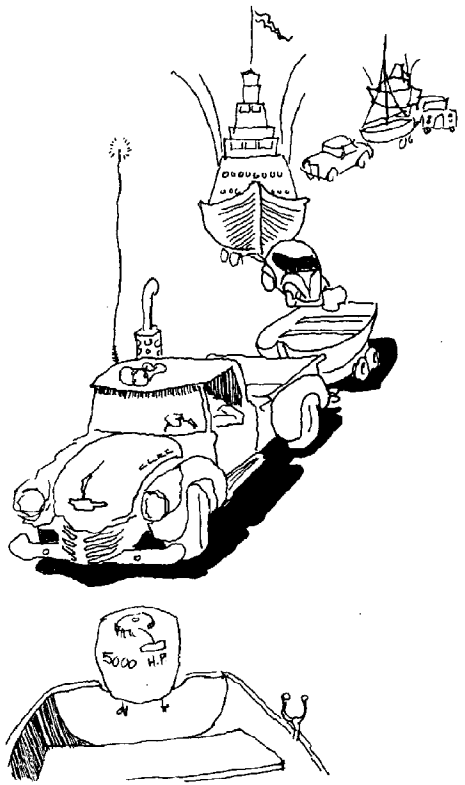
3. Produce economic returns to maritime shipping and other maritime industries by reducing turn-around times and in harbor transit delays, and by permitting the use of more efficiently sized vessels; and

4. Reduce navigational safety risks.



For state programs, such as the Waterways program and the Ocean Sanctuaries Act, Mass. OCZM exercises control through a procedure called networking. Networking is a mechanism designed to minimize bureaucratic complications by obtaining agreements beforehand with all of the Executive Offices of Environmental Affairs (EOEA). The agreements are referred to as "Memoranda of Understanding". And while the terms of the agreements vary, and there is always give and take, Mass. OCZM hopes that other state agencies do not obstruct their projects.

By providing technical and financial assistance, Mass. OCZM hopes to encourage expansion of waterfront uses in under-utilized ports and harbors. For example, it will help plan and construct public piers, marinas, bulkheads, or other projects that provide public benefit and are consistent with ecological policies.



THE PORT DEFINITION

As defined in the CZM Plan, ports possess the following characteristics:[8]

1. Navigable channels of 20 foot depth or more;
2. Lands abutting such channels which are zoned for marine dependent or industrial use;
3. Well-developed road and rail links to port areas leading to major truck and arterial routes;
4. Water and sewer services capable of accommodating major industrial needs; and
5. Land that is separated or remote from residential neighborhoods and commercial business districts.

Implicit in this definition are several assumptions that are specific tc ports only.

---Mass. OCZM feels that the most severe competition for waterfront space will occur in these developed port areas. Because of ecological considerations, existing channels, rather than the dredging of new channels, should be the focus of their efforts.

---Where depths are insufficient for ocean-going vessels, activities like service vessels, fishing, or recreational boating will be located.

---The present supply of berths for oil tankers and related ships exceeds the projected demand through the year 2000, therefore, no new areas need be created.

[8]Massachusetts Executive Office of Environmental Affairs, Massachusetts Coastal Zone Management Preview, A Program for Preliminary Review, November 1976, pp. 2-E/16.

Based on these and earlier assumptions, Mass. OCZM established this policy on port development:

> Policy (19) Encourage maritime commerce and related development in port areas. Deter preemptions of present and proposed maritime-dependent industrial uses which are limited in their locational or economic options. Permit non-maritime-dependent industrial uses which do not represent an irreversible commitment of sites and which do not preempt foreseeable maritime-dependent industrial uses.[9]

Of particular interest to Lynn is Mass. OCZM's definition of water-dependent industrial development. According to the CZM Plan, this development includes large-scale fishing operations, maritime shipping, and other marine industries. The definition, then, holds that conflicts between maritime-dependent industrial uses "....will be resolved by favoring (that use) which is more limited in its spatial, locational, or economic options...."[10]

For example, while many sites are available for marinas, only a few good sites exist for containerports. In accordance with this policy, if a containerport and a marina are proposed for the same site, the containerport will be preferred. Similarly, if two relatively equal uses are proposed for the same site, the use requiring less space will be favored.

This policy brings up an important issue. Should the Commonwealth approve a nonmaritime use already proposed for a site or wait for a maritime-dependent use to be proposed in the future? The State has, in part, answered this question by positing the following two decisions. Common-

[9]Massachusetts Executive Office of Environmental Affairs, Massachusetts Coastal Zone Management Preview, A Program for Preliminary Review, November 1976, pp. 2-E/15.

[10]Ibid., pp. 2-E/16.

wealth and federal permit and funding actions shall be denied to the nonmarine-dependent use if:

1. Public agencies, or fishing, maritime shipping, or marine industry spokesmen have expressed interest in the site for waterfront-dependent uses of particular state or national economic importance; and,

2. The proposed activity would irreversibly commit the site, and the site is the best available for a particular foreseeable maritime-dependent use.

If a development is not water-related but has a viable economic base and does not violate the above criteria, it will be allowed.

Mass. OCZM plans to implement these policies by monitoring the permits and licenses for proposed projects. By making recommendations on the disposition of these permits and licenses, the agency hopes to make the projects conform to its standards. All of the EOEA's permits or licenses for bulkheading, filling, dredging, bridge, or pier construction projects in port areas, "....shall be issued if the projects meet the....above policies and criteria."[11]

Furthermore, all federally aided projects and federal permits must also conform to the above criteria. The Mass. OCZM works through "Memoranda of Understanding" to insure that action under the Waterways Program and Wetlands Program coincides with the decisions of the Energy Facilities Siting Council. Decisions on permits for filling in navigable waters, for clearing obstructions or making alterations in navigable waters, or for building bridges across navigable waters are reviewed under the federal actions in the coastal zone and must be consistent with the Commonwealth CZM Plan.

[11]Massachusetts Executive Office of Environmental Affairs, Massachusetts Coastal Zone Management Preview, A Program for Preliminary Review, November 1976, pp. E/22.

PORT DESIGNATION

Because the list of criteria was so specific, Mass. OCZM and CAC committees found little disagreement over the proposed list of port designations. Mass. CCZM proposed a list of ports, and the list was reviewed by the regional chapters of the CAC for factual comments. Only if a regional chapter could prove that a waterfront met the criteria or failed to meet them could the port be added to or removed from this list.

The method this study used to explore the practicality of a port designation for Lynn was to select as an index a lower-bound port activity for the harbor. If such an activity could feasibly occur in the harbor, then the port designation might be reasonable and more study would be warranted. If the activity was not appropriate to the harbor, then the port designation would probably not be the best designation for the harbor. The port designation becomes reasonable only if the harbor, as it exists today or with further modifications, meets both physical and economic criteria for increased activity in the harbor; otherwise, the designation is nothing more than a title and will provide no increased benefit to Lynn at all.

Barging was chosen as the test activity for Lynn Harbor for several reasons: first, barging is an activity that is not new to Lynn Harbor; second, it is reasonable for small channels such as Lynn's; and third, it was thought it might be a more efficient way for the industries that are already located in Lynn, (General Electric, Norelco, and others), to ship their goods.

The designation of port should reflect some level of industrial activity. The present situation in Lynn, which

includes only a limited amount of recreational and charter boating, cannot justify a port designation. Large ports, such as Boston's are characterized by deep channels 35 to 40 feet that allow the large vessels of commercial shipping lines to easily deliver their cargo. Lynn Harbor is too shallow to support a major shipping industry, and studies indicate that the cost of dredging to depths which would permit such activity are prohibitive.[12]

This physical parameter, channel depth, dictates that any commercial shipping use of Lynn Harbor be limited to shallow draft vessels. Barging is a mode of water transportation that is able to service relatively shallow water harbors, and as such, it merits consideration as a possible port activity for Lynn Harbor.

Barges, essentially floating boxes without propulsion units, are designed for the transportation of bulk commodities. They are propelled and guided by tugboats and may be linked in tandem to a single tug, which results in only an incremental rise in transport cost. The economies of scale favor the movement of large amounts of goods per barge, and so individual barges are large. Standard dimensions for inland-water barges are a width of 35 feet and length of 200 feet.

Until recently, barging was confined mainly to inland river systems and the Great Lakes. However, in the last 15 years, ocean barging has expanded rapidly throughout the world. The reasons for the rapid expansion are the reduced investment cost of barges in comparison to ships; the reduced operating expense of barges because of fewer manpower requirements; the ability of barges to serve specialized routes or terminals; the reduction in barge terminal requirements; and the ability of barges to serve shallow terminals.[13]

[12]Massachusetts Executive Office of Environmental Affairs, Massachusetts Coastal Zone Management Preview, A Program for Preliminary Review, November 1976, pp. 2-E/30.

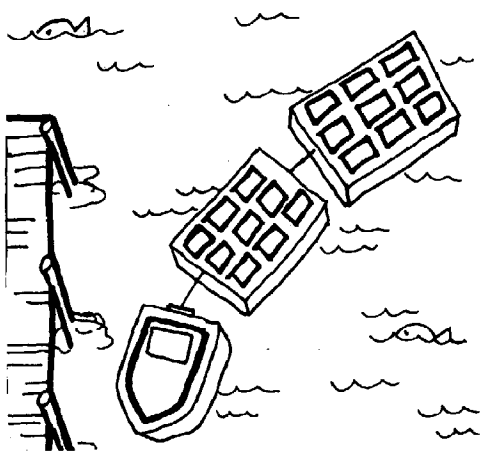
[13]Ernst, Frankel, Studies in the Future of Atlantic Ports, M.I.T. Sea Grant Office, Cambridge, Mass., 1973, pp. 342.

Ocean barges are generally larger than inland barges. They range from lengths of 250-475 feet, widths of 30-54 feet, drafts of 14-32 feet, and they typically carry cargoes from 4000 to 40,000 tons.[14]

Domestic inland barge traffic primarily carries bulk commodities, such as ore, grain, or coal. Ocean barges primarily carry petroleum products and a few dry bulk goods. In such trades, barging is less costly per ton-mile than shipment by rail or truck. Direct transportation costs of barge shipping may vary widely. They are dependent on the route, type of service, schedule, labor contract, terminal facilities, and cargo carried. Other economic factors affecting the total operating cost of barges are:

1. The availability of transporation facilities on shore;
2. The need for storage;
3. Total transit time for the commodity;
4. Quantity of commodity to be moved in a given time period;
5. Cost of capital investment;
6. User charges and various other charges; and
7. Transfer or intermodel costs.

Barging, theoretically, should carry bulk goods at low rates, however, in practice, the low cost advantage is often offset by the minimum weight requirements set by the barge operators.



[14]Ernst Frankel, Studies in the Future of Atlantic Ports. M.I.T. Sea Grant Report, Cambridge, Mass., 1973, pp. 344.

Because of the type of goods transported and the characteristics of barging, barge routes are usually custom designed to service a particular bulk commodity supplier and a bulk commodity consumer or distributor. Barging terminals are usually supplied by the consumer, and often the terminal is merely a simple transfer facility in a sheltered harbor. Barge terminals do not require the facilities, warehouses, solid piers, and similar structures necessary to service ocean going ships.[15]

Today, little barge traffic occurs along the New England coast, because huge mining operations, large grain farms, or other industries which might produce bulk cargoes are not located in the area.

In Lynn Harbor in particular, barging is currently conducted on a very limited scale. Six times a year, General Electric trucks industrial gears, twenty feet high and weighing 125 tons, across the Lynnway to the abandoned harbor facilities at the Massachusetts Electric site. Once there, the huge gears are hoisted by a floating Naval crane onto a barge, and a tugboat tows the barge from Lynn to the port of the shipyard purchasing the gears.

G.E. barges these gears because they are used by shipyards on the coast, and the large size of the product does not allow for shipment in one piece by rail or truck. But even with the low rate per ton-mile for barging, the total transportation costs are large. A shipment from Lynn to Newport News costs between 25,000 and 30,000 dollars.[16]

Products barged into a harbor have to be either used near the shore or distributed inland by rail and truck. But reshipping products from Lynn currently is not economically

[15]Ernst Frankel, Studies in the Future of Atlantic Ports, M.I.T. Sea Grant Report, Cambridge, Mass., 1973, pp. 375.

[16]This cost was quoted by the Transportation Manager at General Electric in Lynn.

feasible. Unloading and reloading products from one mode of transportation to another introduces a major increase in the price of the product; and, since Boston Harbor has superior facilities for rail and truck shipment in comparison to Lynn, it would attract any cargo arriving in the area by water and needing reshipment. The possibility of Lynn Harbor receiving any excess demand from Boston is also remote, because Boston Harbor itself is currently under-utilized.[17] This indicates that the cargo from any barge docking in Lynn would have to be used in or near Lynn.

Regular barge service to Lynn would also require maintenance dredging to facilitate maneuverability and a barge terminal to handle the cargo. These costs have to be considered along with the cost of helping to locate an industry which would use the commodities shipped by barge.

Based upon the information collected about barging, study members were able to draw a fairly clear-cut conclusion about the desirability of Lynn seeking a port designation. Physically, the harbor is marginally suitable for barging. Its channel depth of 22 feet is sufficient for barges to service the harbor. But if the harbor were to provide the necessary space in which the barges must be maneuvered, the extensive tidal flats would require costly dredging.

Two primary drawbacks make locating a barging service in Lynn prohibitive. First, there is no existing onshore facility to receive the barged goods. At the very least, construction of a suitable wharf would be necessary. And with some cargoes, a crane or other type of dockside unloading apparatus might also be needed. In addition, once the barged commodities arrive in Lynn, no suitable land transportation network exists to accommodate the commodities. Second, there is no indication that sufficient traffic could

[17] Massachusetts Executive Office of Environmental Affairs, Massachusetts Coastal Zone Management Preview, A Program for Preliminary Review, November 1976, pp. 2-E/28.

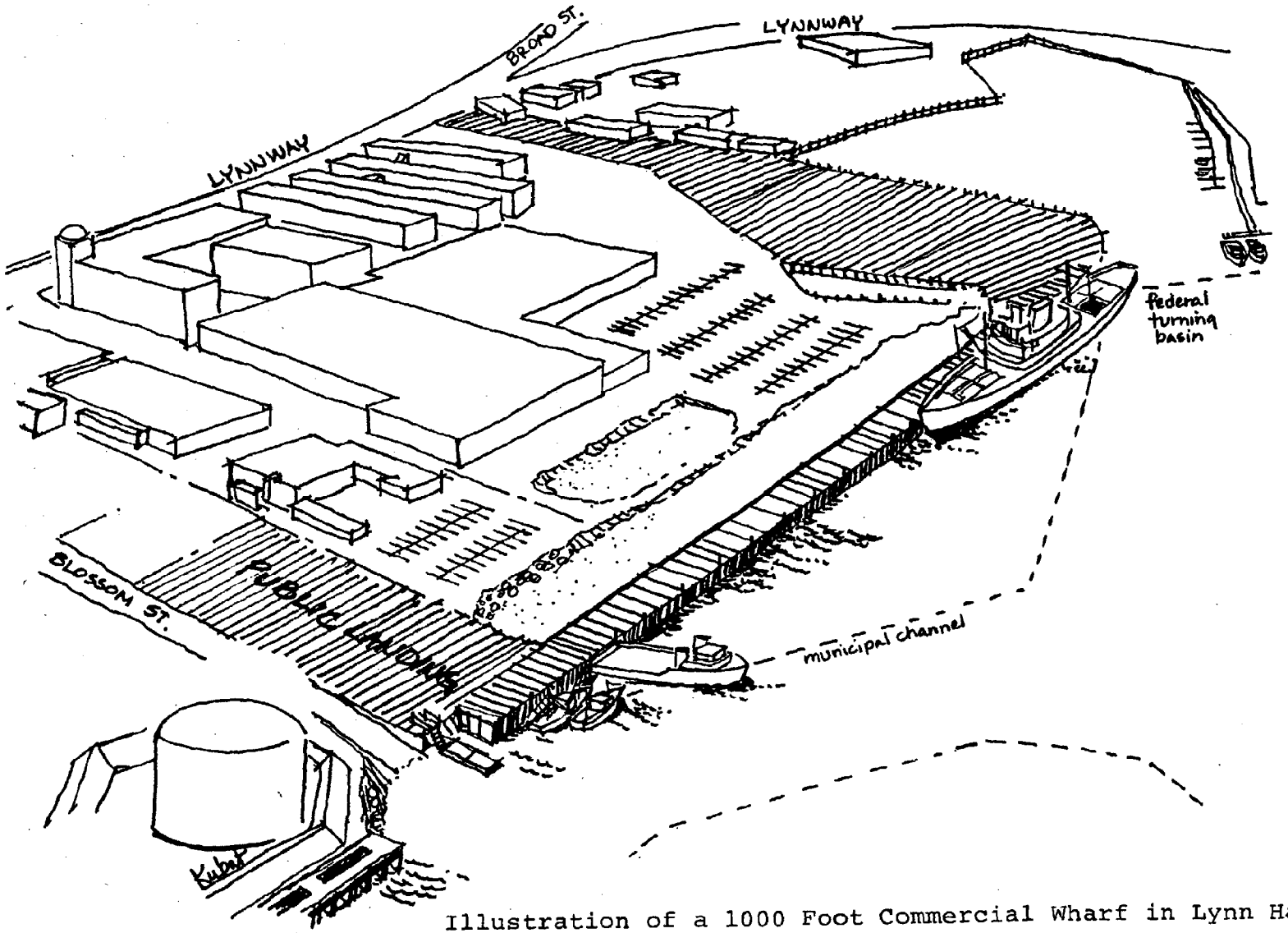
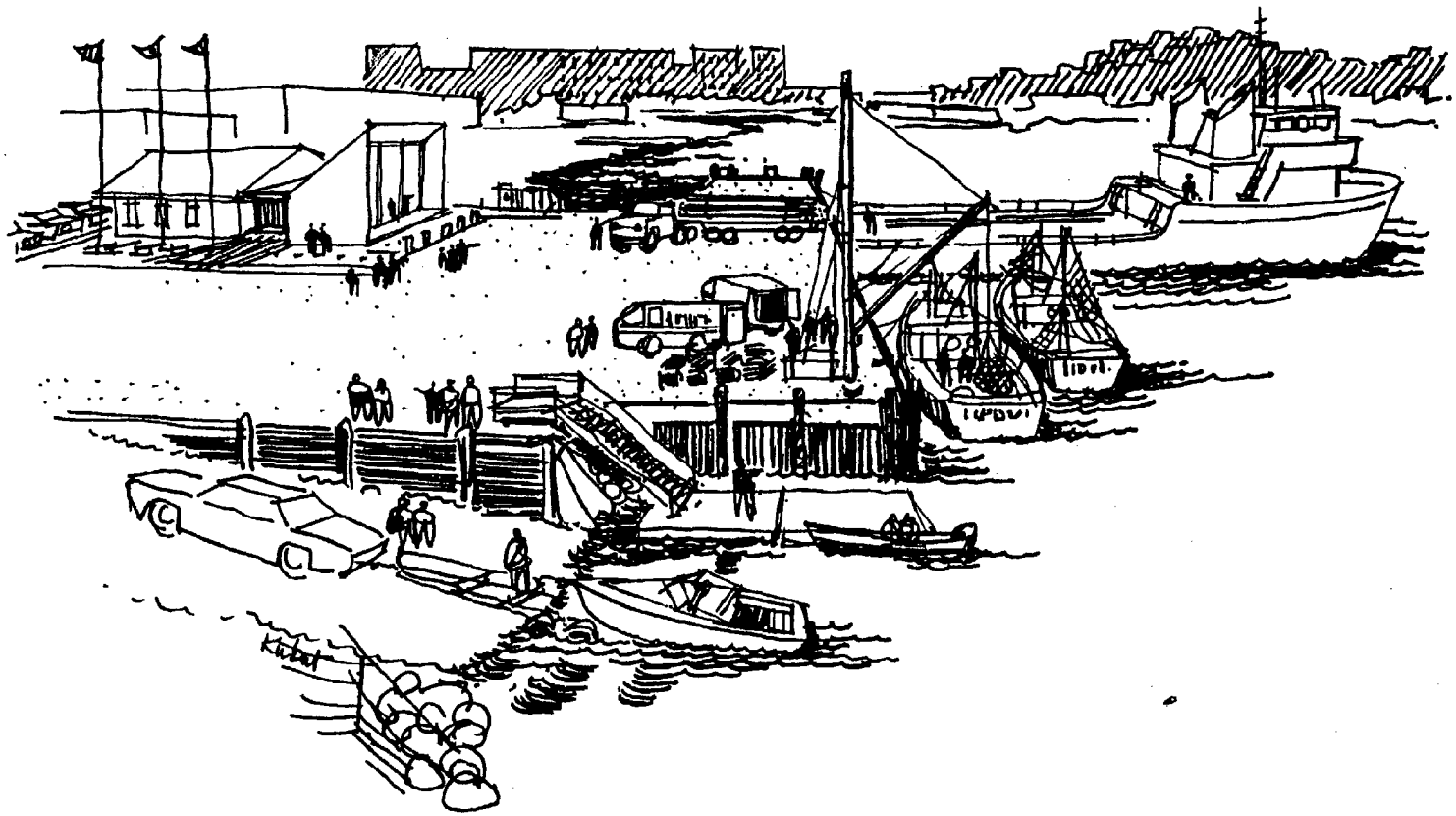
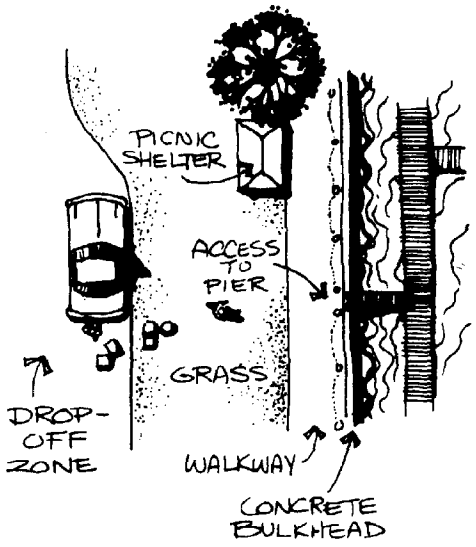


Illustration of a 1000 Foot Commercial Wharf in Lynn Harbor



Possible Uses of a Commercial Wharf



be generated to warrant developing facilites, even if space could be found. At present, there are no nearby industrial users large enough, even in aggregate, to warrant a barging operation. Only when the industrial climate of Lynn can support it, will barging become a reasonable alternative.

Lynn should not seek port designation. Although at present the harbor meets the physical definition set forth by CZM for ports, the harbor cannot accommodate a plausible, lower-bound port activity--namely, barging. That is, Lynn Harbor should not seek a port designation because it cannot support a port activity which requires only minimal facilities in comparison to other port activities. The harbor's turning basin is too small for most ocean barges; and the waterfront has no support facilities such as storage space, road and rail access, or industrial demand. The lack of support facilities is the real issue: port activity on the harbor is not economically feasible. Even if the harbor had the necessary facilities, the demand does not exist for barging. The demand would have to be great enough that barge operators would turn away from Boston to construct facilities in Lynn. But, since Boston Harbor is far superior to Lynn Harbor, in the services that it offers, and is itself, underused, barge operators are extremely unlikely to turn to Lynn Harbor.

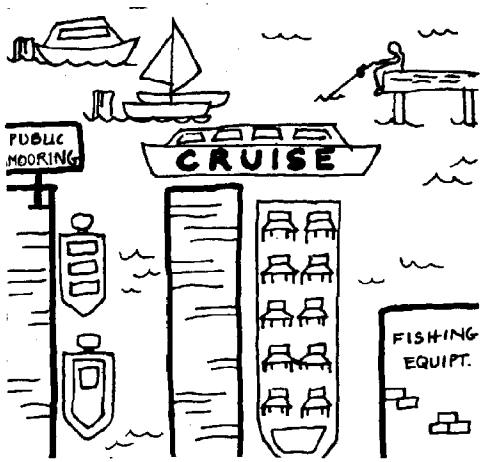
Moreover, a port designation creates a certain psychological bias. The designation indicates that Lynn seeks industrial, water-dependent uses and is less concerned with smaller, nonindustrial development. And because the city has limited manpower, funds, and city-owned land, the needs of small developments in competition with large developments can be easily overlooked. Within the city, there may be capital sources that cannot accommodate larger, more capital intensive develcpment, and yet may be quite capable of meeting the needs of small recreational development.

Furthermore, capital intensive uses, as are most industries, may fail to serve another Lynn goal--more jobs. Capital intensive industrial operations often fail to provide great numbers of high skill jobs that local governments expect. Electrical generating facilities are typical of an activity with a high ratio of capital investment per employee.

In summary, a port designation does not appear to be a reasonable choice for Lynn. Rather, Lynn should aim its development toward activities that are smaller in scale and involve the city; activities that are recreational or of a business nature.

THE DEVELOPED HARBOR DEFINITION

As stated earlier, Mass. OCZM instituted a classification scheme to recognize the difference in use, capacity, and focus among the harbor and port areas of Massachusetts. The designation "developed harbor" is the alternative classification; and, as it has done for ports, Mass. OCZM has promulgated criteria, policies, and the methods to implement those policies for developed harbors.

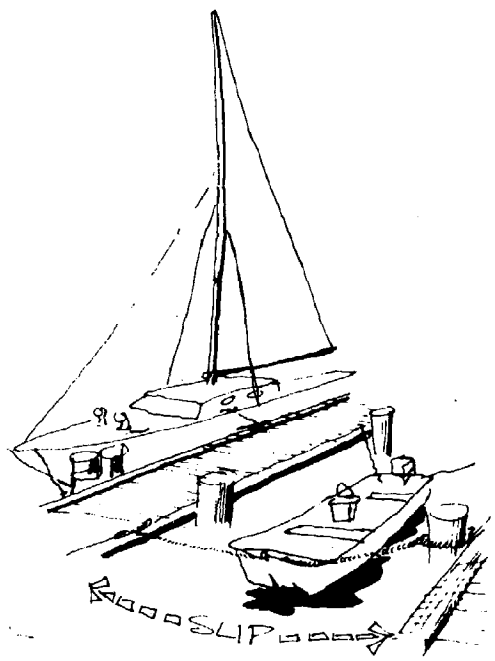


A developed harbor is defined by Mass. OCZM as follows:

1. Provides public mooring space, berths, slips, ramps, and docks which serve a region-wide boating public;

2. Hosts harbor facilities used by commercial fishermen;

3. Serves cruise boats, ferries, and other marine industry; and



4. Presents unique development opportunities for the fishing industry or for waterfront renewal and revitalization.[18]

A developed harbor, then, is one where activity is aimed at commercial and/or recreational use rather than heavy industry. While Lynn has insufficient market demand to meet a port designation, the demand is clearly visible in the entire North Shore region for developed recreational and boat related commerce.

The method used to explore the feasibility of a developed harbor designation was to select as an index an activity that is an appropriate developed harbor use. If such an activity was shown to be feasible, then the developed harbor definition might also be feasible, and warrant further study. The activity chosen was a marina and the study is found in Chapter Ten. The conclusion is that a marina is a viable developed harbor activity for Lynn.

As outlined earlier, as long as expansion is consistent with Mass. OCZM's ecological policies, it will aid harbors with technical and financial assistance for the expansion of water-dependent uses. This assistance can aid in harbor planning or in infrastructure planning for facilities for ferry services, fishing industry, recreational boating, etc. Assistance is also available for construction of piers, docks, and bulkheads.

Dredging money for harbors is first allocated to those harbors which serve a larger than local demand. And according to the proposed Mass. OCZM designation, instead of the 200 harbors that received federal and state money in the past for dredging, only 40 are eligible today.

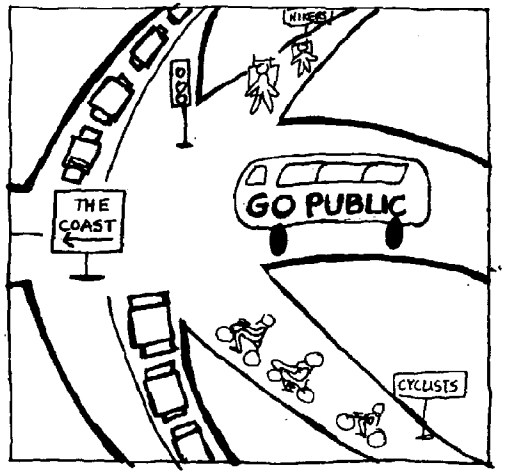
[18]Massachusetts Executive Office of Environmental Affairs, Massachusetts Coastal Zone Management Preview, A Program for Preliminary Review, November 1976, pp. 2-E/19.

Applications for assistance under the above policies must be consistent with the only Mass. OCZM policy that exclusively centers on developed harbors:

> Encourage urban waterfront redevelopment and renewal in developed harbors in order to link residential neighborhoods and commercial downtown areas with physical and visual access to the waterfront.[19]

So their harbors can be developed, cities and towns are eligible for technical assistance to help them prepare funding, cost, and preliminary engineering studies for these uses. In addition, Mass. OCZM is not the only source of technical and financial assistance available to local communities. The Community Development Block Grant Program, the U.S. Bureau of Outdoor Recreation, the Urban Mass. Transportation Administration, and the state DPW's federally financed Bicycle Transportaion and Pedestrian Walkways program are also programs that communities might take advantage of for harbor development. These programs support such activities as housing and housing services, recreation, and transit systems.

Mass. OCZM's policies relate not only to developed harbors but also to other urban waterfronts which are characterized by dense, urban, residential neighborhoods or commercial development. In any programs that involve the Massachusetts Environmental Protection Act (MEPA), or the National Environmental Protection Act (NEPA), review processes, Mass. OCZM, as part of those processes, will support a community's requests which are consistent with their Coastal Zone Management policies. For any programs falling outside these procedures, Mass. OCZM will act as an advocate for them.



[19]Massachusetts Executive Office of Environmental Affairs, Massachusetts Coastal Zone Management Preview, A Program for Preliminary Review, November 1976, pp. 2-E/23.

SPECIAL DESIGNATIONS UNDER THE COASTAL ZONE MANAGEMENT PLAN

The possibility of Lynn laying the foundation for new development in the harbor is aided by special designations created by Mass. OCZM. Criteria for designation, and how the designations might aid Lynn are the subject of this part of the report.

Congress, in the federal Coastal Zone Management Act, required all state management plans to inventory and designate areas of particular concern within the coastal zone.[20]

In response to that requirement, Mass. OCZM established three special categories: Significant Resource Areas (SRA), Areas for Preservation and Restoration (APR), and Special Assistance Areas (SAA). SRA's are those coastal areas having important natural or manmade resources or containing potential hazards; APR's are areas characterized by delicate conservation, ecological, recreational, or aesthetic values that must be restored or protected; SAA's are areas warranting special funding or planning because they contain an SRA and are either critical to the economy of neighboring communities or are affected by state and/or federal action. And as required in the federal act, citizen groups participated in the designations of these special areas.

The SRA and SAA designations are particularly relevant to Lynn as it has been designated an SRA and is eligible to become an SAA. Mass. OCZM has outlined special policies and procedures for these designated areas.

Under the Significant Resource Area designation, the State views the harbor's resources as having the potential to

[20]United States Codes Annotated, 16 Sec. 1453.

justify efforts expended in return for public benefit. Of the five standards[21] enabling a city to qualify for this assistance, two apply to Lynn: recreation and developed areas.

Lynn Harbor's two private yacht clubs, private marina, and public landing and the potential for their greater utilization provide sufficient evidence to Mass. OCZM that the harbor's resources are significant. Furthermore, since Lynn Harbor is qualified to be a Significant Resource Area and, in fact, has been designated as one, Lynn is eligible for the benefits accruing to harbors designated as Special Assistance Areas. Eligibility is defined by the following Mass. OCZM guidelines:

The area contains at least one SRA and

a. the area plays an important role in the economy of more than one town either through commerce or industry;

b. the area or use of the area affects, is affected by, or is under the jurisdiction of two or more municipalities;

c. the area is state owned;

d. the impacts, concerns, or conditions associated with the area are a result of state action; or

e. state and/or federal monies have been or will be expended to insure, protect, or aid investments, developments, or human safety within the area.[22]

[21] Marine Environment, Hazardous, Visual, Recreational, or Developed Areas.

[22] Massachusetts Executive Office of Environmental Affairs, Massachusetts Coastal Zone Management Preview, A Program for Preliminary Review, November 1976, Sec. 3, pp. 25.

Even if Lynn meets the criteria, it does not automatically receive the designation. The City must not only meet criteria, but it must ask Mass. OCZM to be designated as an SAA. After receiving designation, Mass. CCZM will focus its attention on harbor development and management. A "mini-plan" will be developed to specify the types of development consistent with the goals of both Mass. OCZM and the City of Lynn. The Plan will contain methods to obtain financing for the projects outlined. Mass. OCZM will provide incentives and assistance in the forms of:

1. assistance in securing federal and state funds needed to carry out development programs and projects which meet the policies and objectives of the CZM Plan;

2. financing of feasibility studies and field investigations for waterfront renewal, port and harbor development, and dredge spoil disposal;

3. technical assistance to communities to provide needed marine biological, hydrological, geological, recreational, erosion, and general land use planning, and legal expertise; and

4. energy impact funding.[23]

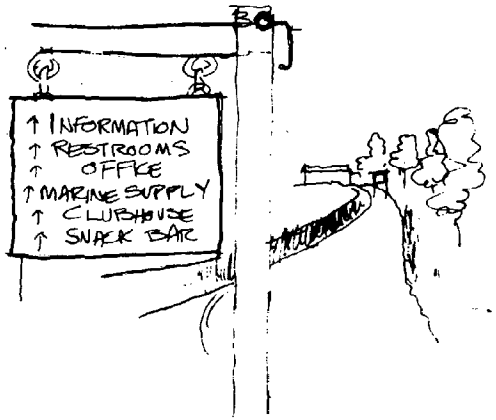
Mass. OCZM will implement their funding policies and award grants, if the city and private developers show that their plans can be implemented and that the plans coincide with the policies and objectives established by the regional chapter for the SAA. These applications for assistance must provide one third of any study costs and have demonstrated that other state or federal funding is unavailable. The substantial subsidy involved here, certainly makes this SAA designation a reasonable alternative for Lynn.

[23]Massachusetts Executive Office of Environmental Affairs, Massachusetts Coastal Zone Management Preview, A Program for Preliminary Review, November 1976, Sec. 3, pp. 27.

A SUGGESTED COURSE OF ACTION

This recommendation is predicated on the assumption that Lynn obtains a developed harbor designation and actively seeks Mass. OCZM's assistance. First, Lynn obtains the SAA designation for which it is qualified. Next, the city with Mass. OCZM, prepares a "mini-plan" for the harbor which outlines the means to encourage recreational boating and which also outlines how Mass. OCZM will work with Lynn. Concurrently, or after the creation of the "mini-plan," Lynn conducts studies of the nature of the regional demand for kinds of activities whose demands are not being met (for example, space for large power boats). Mass. OCZM will pay two-thirds of the study's costs. Part of the study should focus on documenting regional demand which Mass. OCZM requires before dredging money is disbursed.

In summary, with the "mini-plan," the feasibility studies outlining recreational boating possibilities, and with proof that regional demand for the harbor exists, Lynn should have access to the money and technical assistance to bring development plans to fruition.



Lynn can respond to the marina alternative, or any other harbor development scheme, outside the context of the CZM program. Lynn should seek a harbor designation now to enable them to be eligible for dredging funds but they can still proceed with their development plans without the aid and assistance of Mass. OCZM. Outlined below are the ramifications of Lynn's not seeking Mass. OCZM assistance followed by the second case of Lynn's seeking CZM's assistance.

Case I: Lynn receives the developed harbor designation and does not actively seek CZM assistance.

---The city must, on its own, fund all studies of the harbor.

---The city, without Mass. OCZM's support, must deal with all state agencies which have programs that affect harbor revitalization.

---Although eligible for dredging money, Mass. OCZM will not seek out Lynn to give them that money because of the fierce competition for those funds.

---Any municipal action must obtain a CZM "certificate of consistency" (applies to both harbor and port designation) to verify that Lynn's actions meet with CZM goals.

---The City will not receive any funds from Mass. OCZM for building access roads, or for costs associated with operating or maintaining recreational facilities.

Case II: Lynn actively participates with Mass. OCZM, seeks financial and technical assistance, legislative intervention, interagency interfacing, and a general spirit of advocacy toward the State program.

---By making their interests known to Mass. OCZM, Lynn has access to dredging funds.

---Lynn obtains assistance for engineering studies, cost feasibility studies for the harbor area, and Mass. OCZM will provide one year grants for up to 20,000 dollars.

---Mass. OCZM will help Lynn obtain funds and support from other state and federal programs and agencies. One program of particular interest is the federally funded state's DPW Pedestrian Walkway program.

---Presently Lynn is designated as a Significant Resource Area (SRA) and is eligible for designation as a Special Assistance Area (SAA). If Lynn obtains an SAA designation, the city will receive support. In addition to the assistance made available to SRA's for maintaining and developing the harbor, Mass. OCZM will create a "mini-plan" describing how CZM's goals and Lynn's goals coincide and will describe an implementation scheme for the Plan.

EVALUATION OF CZM ACT AS IT RELATES TO LYNN

In reviewing the CZM Plan and constructing the recommended path of action outlined above, several aspects of the CZM Plan raised questions about implementation procedures. Some of the decision rules found in the Plan are possibly difficult to implement or worse, misleading. For example, as part of the policy on water-dependent industrial uses, Mass. OCZM will facilitate the introduction of nonwater-dependent industrial uses if they do not "irreversibly commit the site" to that use.[24]

It is difficult to imagine heavy industrial uses that can be reversed or relocated. Certainly any manufacturer who chooses to settle on a particular site wants to be guaranteed that he has security for his business. This is one of many CZM rules where a case can be made for either side; business and economic viability of the city on the one hand, and preservation of the coastal area for water-dependent uses on the other. Mass. OCZM may find itself embroiled in lengthy hearings each time such a situation arises. The inherent time delays may make large industrial uses decide to locate elsewhere at the expense of the city that would have benefitted from the added commerce.

Another issue is the tradeoff between long and short term priorities. Elected city officials are often more interested in the short term or immediate solution. This insures their popularity and approval with their constituents. Nonelected state officials generally take a more long term view of solutions. The state must also consider the effect of one town's actions on another. More importantly, the state must consider a broader set of social values and benefits including all externalities caused by individual

[24]Massachusetts Executive Office of Environmental Affairs, Massachusetts Coastal Zone Management Preview, A Program for Preliminary Review, November 1976, pp. 2-E/5.

local actions. This dichotomy of perspectives, between the city and state, makes the resolution of the tradeoffs caused by the CZM Plan, a subject of political compromise. In bargaining situations such as this one, the result may not be palatable to either side.

Another CZM Plan problem lies in the criteria for the definitions of port and harbor. The definition should not only guide CZM planners, but should provide the localities with a clear understanding of the economic capabilities, as well as the physical ones already stated, that are implicit in that designation. Lynn should not receive a port designation, when the city can't support a lower bound use such as barging, and in fact, would gain profitably from a developed harbor definition. The larger and more embarrassing problem for Mass. OCZM is that the definition is so loose that Lynn was designated a port to begin with, when a developed harbor definition would be more appropriate. It is hoped that Lynn will appeal this decision. Mass. OCZM should broaden their criteria for designation to include tests for economic viability of waterfronts, in addition to physical attributes. In the case of Lynn, waterfront planning cannot happen in isolation of the city's economic well being.

This analysis is not exhaustive. It merely indicates some of the stumbling blocks encountered by this study group while trying to look at the possibilities for the revitalization of Lynn Harbor. Further studies for the City may be constrained by Mass. OCZM's policies, grants for feasibility studies cannot exceed 20,000 dollars in any one year. Studies, such as coastal ecology studies, that run a course of several years face the uncertainty of annual cyclical funding. If this policy is going to retard the cities from getting started on needed research, then the policy is of no

Table 9-1
Summary of Conclusions

Criteria	Port	Developed Harbor
Physical (Does it meet the physical definitions?)	OCZM - YES MIT - YES	OCZM - YES MIT - YES
Economic (Can it be Profitable?)	OCZM - Does not address issue MIT - Highly unlikely; no demand, severe competition	OCZM - Does not address issue MIT - Possibly; recreational boating and commercial development
Implementation (Required techniques)	OCZM - Does not address issue MIT - Onshore space, storage facilities, rail, road access	OCZM - Does not address issues MIT - Parking space, support facilities

new benefit. Mass. OCZM should have a more realistic idea of the studies that cities will be interested in and their associated time spans.

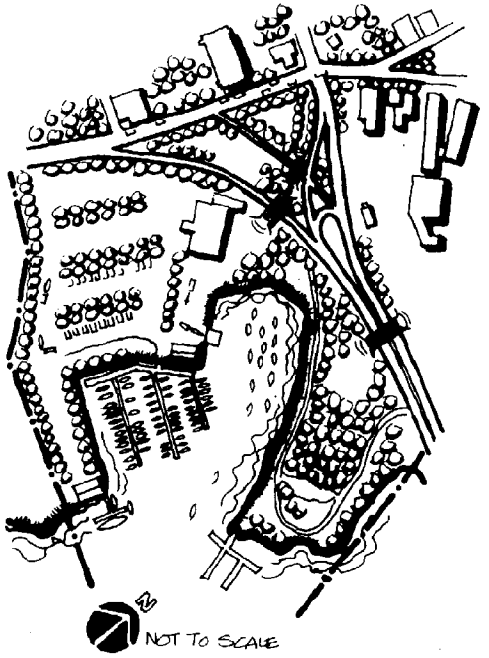
A review of the CZM Preview suggests that the Plan is biased toward environmental protection and preservation. While these are noble goals, they are rather disconcerting for the city of Lynn. This community, and ones like it, lost, long ago, their natural untouched attributes to become an important source of commerce. Today, when coastal cities still enjoy large percentages of the state's population, Mass. OCZM should add the means for economic revitalization to their list of priorities. One means by which they could directly help Lynn is to investigate and incorporate some financing programs into the overall Plan. If they can develop a funding source for Lynn, Lynn will gain added momentum with its own revitalization plans.

10

Preliminary Marina Development

Preliminary Marina Development

Nationwide, the demand for recreational facilities continues to grow, but the coastal urban areas in Massachusetts which remain available for recreational development are small and cannot be developed inexpensively. Lynn is fortunate in that it possesses an underused harbor and waterfront area which might be advantageously converted to recreation.



Marina development was studied for two reasons. First as an index activity that a developed harbor, as defined in the Massachusetts Coastal Zone Management Plan, should be able to support. Second, planning personnel in the city of Lynn have expressed interest in this type of development because their studies show that the demand exists for recreational boating. Their claims to this end are substantiated by sources quoted later in this report.

We wish tc underscore that this study is intended only as preliminary exploration of the factors pertinent to establishing a marina in Lynn Harbor. City planners might well use the study as a departure point and a focus around which to institute more extensive studies. Based on this preliminary study, four broad conclusions can be set forth:

1. Marina development in Lynn Harbor is possible and desirable, and would be a good first development scheme for the waterfront;

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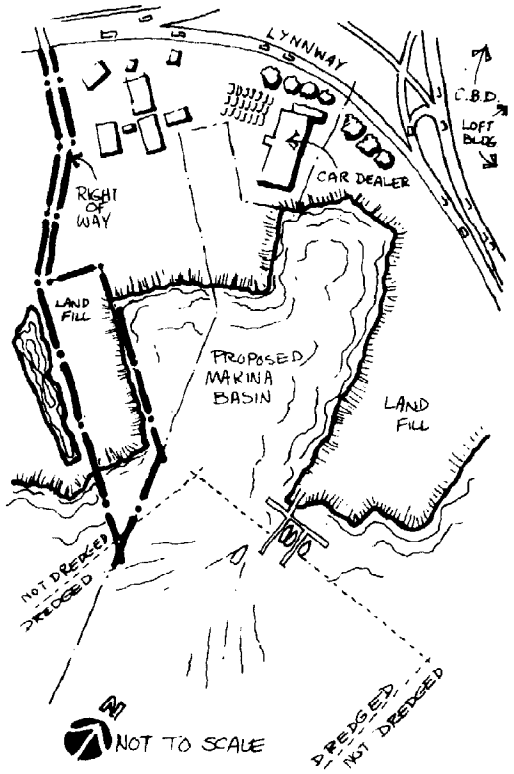
2. Marinas are good gateway enterprises; that is, even if they do not provide great amounts of revenue, they attract visitors and stimulate spin-off development;

3. Most of the expense for marina development is incurred, not in structural facilities, but in unseen dredging and land site preparation;

4. Marinas, by themselves, are not employment intensive activites.



The study takes up the questions of: one, demand for marina development; two, services that marinas render their patrons and sponsoring communities; three, land and water site preparatien, including preliminary dredging estimates; four, suggested design characteristics for onshore facilities; five, suggested design of offshore facilities; and six, recommendations for marina development in Lynn Harbor.

To elucidate the procedures necessary for marina development, study members chose a vacant land parcel owned by the Clifford Realty Trust at the northern end of the harbor and investigated the possibilities of establishing a marina on it. The parcel is a narrow two-acre lot adjacent to the dredged turning basin and near Lynnway Marine, with which it presumably would share water areas. The north harbor was chosen because it offers excellent physical and visual access from the Lynnway and is close to the central business district. In addition, the site, along with the Lynnway Marine Site, creates a natural protected small boat marina. Based on this preliminary study, however, the parcel as it presently stands was not large enough to generate enough income to justify building a marina, and other areas should be examined. To establish a successful and competitive marina, Lynn should plan on a three to four acre parcel, which will permit the mooring of 200 boats. The conclusion

drawn at the end of the study was that while this site remains prime for marina development, adjacent parcels are needed to bring the land area up to three to four acres.

As an alternative site, the city might consider repurchasing the land currently occupied by the New England Power Company. Part of the large parcel could be used to establish a marina and the remainder sold to a private developer or developed by the city itself.

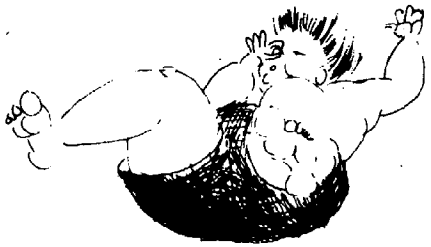
If, on the other hand, the city wishes to use the parcel in the north harbor, after all, then it should consider purchasing the land immediately adjacent to the north, which is currently occupied by an automotive dealer. Harbor frontage will most likely appreciate in value. If a marina were developed and were successful, the city would probably wish to expand the marina and to improve the entire north harbor area. This area, which is now committed to non-water-related, strip development, is the axis upon which revitalization of the harbor and the central business district rests.

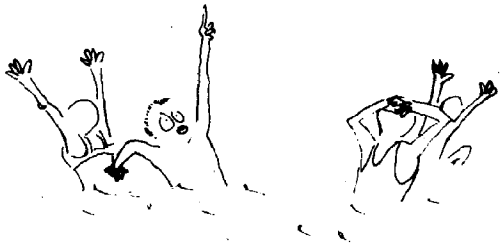
DEMAND FOR ADDITIONAL RECREATIONAL FACILITIES

Over the past several decades the American public's leisure-time and disposable income have risen.[1] The increases have helped boost the summer migration to shorelines and helped deepen an interest in water sports. Boating, sailing, and canoeing are now the ninth most popular leisure-time activity,[2] and the Massachusetts Division of Marine and Recreational Vehicles estimates that in 1975 one in five state residents participated in boating. The boating industry itself has grown approximately 5-7 percent in each of the three year periods of the last decade. Because only motor-

[1] Basic information from Economics Research Associates, Boston, Mass., Market Study for Downtown Gloucester, prepared for the city of Gloucester and the Gloucester Downtown Development Commission, October 1976, pp. VII 1-13.

[2] Donald W. Adie, Marinas, A Working Guide to their Development and Design, Boston: Cahners Books, 1975, pp. 15.





ized boats must be registered in Massachusetts, thousands of small and medium-sized sailboats and other small craft are not considered in these figures. Most of the small boats are under 16 feet in length and do not require the use of a marina or a commercial storage facility; but boats longer than 16 feet constitute about 48 percent of the total number of boats in the Commonwealth and do require such facilities. It is these larger boats (specifically, 26-40 feet), which now account for most of the growth in the industry.

The water recreation industry in Massachusetts may be growing faster than the population, but so are development costs. And these costs have helped mold the developments and industry. The price of land has risen so much, in keeping pace with the national trend of rising costs, that other forms of recreation which nominally settle near shorelines have retreated inland. Existing recreational ventures, such as marinas and boatyards, though enjoying high profits, simply cannot expand because of the high cost and diminishing supply of waterfront land. Furthermore, in addition to high land costs, the private sector also encounters prohibitively expensive construction costs and rising operational costs, which cast doubt on its ability--without the public bearing most of the costs--to meet the demand for boating needs.

The Massachusetts Executive Office of Environmental Affairs (EOEA) feels the recreational dilemma is critical and that, if solutions are not forthcoming within the next decade, the remaining opportunities will be lost.

To avoid this loss, attempts at creating recreational sites must be made if only for the fact that such activities are good "gateway enterprises" which attract visitors who spend money on food, lodging, and tourist facilities.[3]

[3]Michael B. Kennedy, Boston Naval Shipyard: A Reuse Study, master's thesis, M.I.T. Dept. of Ocean Engineering, May 1975.

Currently in Massachusetts, there are approximately 100 recreational harbors which contain over 300 marinas that account for 20 percent of the coastal boating activity; 30 public access ramps that account for another 20 percent; and town and private marina moorings that account for 40 percent.[4]

Also, in assessing the demand for a marina in Lynn Harbor, study members found that Massachusetts harbormasters volunteered the--seemingly contradictory--information that, although their marina facilities are very much in demand, their harbors are greatly underused.[5]

The reason might lie in the poor condition of Massachusetts harbors. Be that as it may, for whatever reason, Lynn should have all the more incentive to capitalize on this rising demand, but should prepare its facilities properly.

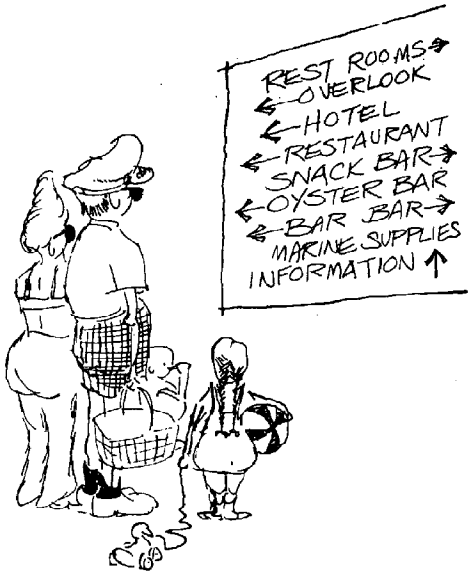
Finally, it should be borne in mind, that the market demand for marina space is not unlimited. For Lynn, the significant point is that the rising popularity of boating and the rising demand for berthing space strongly suggest that a marina which is well managed and offers reasonable services should not fail for lack of demand.

MARINA SERVICES

Marinas can vary greatly in size, facilities, and services. In the past, the standard marina typically included mooring and slip space, fuel service, hauling service, ice, and limited maintenance and supplies. The smaller, more basic marina still exists and is still a viable development, on its own or, often, as an adjunct to another development.

[4]Massachusetts Executive Office of Environmental Affairs, Massachusetts Coastal Zone Management Preview, A Program for Preliminary Review, November 1976, pp. 2-F/6.

[5]Joint Development Study, A Preliminary Analysis of Some Joint Development Techniques, New York City, pp. 22.



And in increasingly less common situations where shoreline property is relatively inexpensive and where a minimum of site preparation is required, a small marina can still be built and can still succeed. However, the public nowadays generally desires larger marinas (200 slips or more) and larger marinas are the kinds more commonly developed. A new and larger marina typically includes the features found in a small marina and augments them with showers and saunas, a self-operated laundry, a fully-stocked ship's store with groceries and clothing, maintenance facilities, and some combination of the following:

Bar
Hotel or motel
Liquor store
Tennis courts
Swimming pool
Food delivery
Club headquarters and sailing school
Specialty shopping
Boat and equipment sales.

New marinas also usually offer patrons parking and winter boat storage, and these facilities are often combined. If the parking lot is easily accessible to the water, boats may be stored in the lot during the winter. Boats also may be stored at their slips during the winter, if the harbor has ice-free systems.

In addition to the particular services that marinas might render their patrons, they are also compatible with and support most surrounding activities. In particular, they provide excellent amenities for neighboring retail, office, housing, research, and other recreational activities. Marinas also fit into industrial settings as well, but in such settings they must provide more of their own consumer

facilities. Moreover, in industrial areas, marina boat traffic can interfere with commercial boat traffic, docking, or mooring. For that reason, marinas should probably be located on the edges of the harbor area where commercial boat traffic is not found.

Not all the possible effects marinas have on their sponsoring communities are beneficial. Recreational boating requires support services, such as marine facilities and services, slips or moorings within a protected launching ramp area, satisfaction of minimum water-depth requirements, and a source of clean water. Some of these requirements can entail substantial expense. Moreover, recreational facilities can also have a substantial negative impact on a city's transportation network and other municipal services; and, if recreational sites prove inadequate to meet demand, they may be overused and abused and the entire recreational experience degraded.

Finally, on the negative side, marinas are not particularly employment intensive activities. Less than a dozen employees half of whom work full-time, can adequately operate a typical new marina. In addition, the limited range of skills needed in the seasonal nature of the work both usually dictate low to median wages. A marina, therefore, will not meet much of Lynn's employment needs.

LAND AND WATER SITE PREPARATION

Construction costs of a marina are difficult to estimate accurately but, currently, a safe estimate for a full-service marina of 200 slips or more is 1500-2000 dollars per slip.[6]

[6] Economics Research Associates, Boston, Mass., Market Study for Downtown Gloucester, prepared for the city of Gloucester and the Gloucester Downtown Development Commission, October 1976, pp. VII 11.

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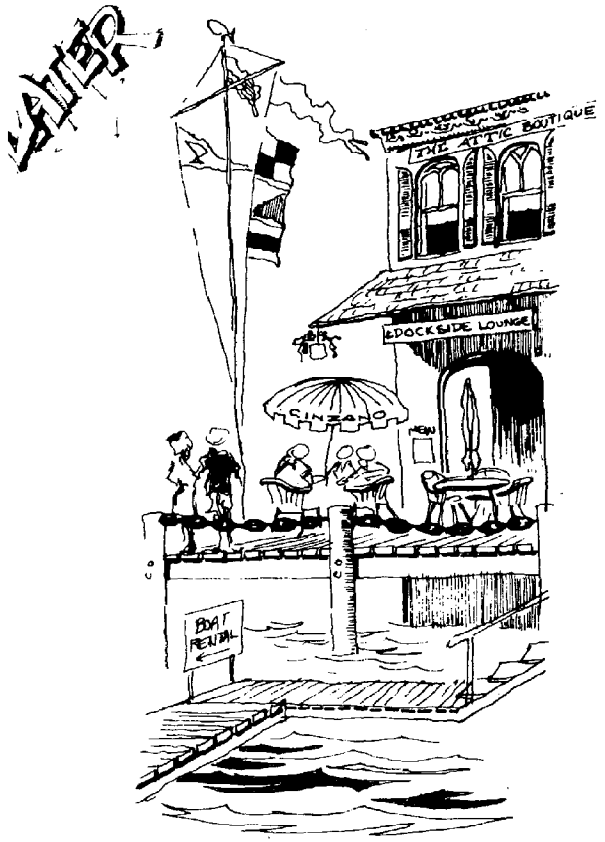


Planning a marina and following the necessary permit procedures (for land and water preparation) typically take several months, so the initial capital investment may be divided among a range of lending programs and institutions.

A marina with a 200-slip capacity will require between three and four acres of land.[7] And because the site preparation costs will be a high percentage of the total cost of a marina, choosing the proper site is perhaps the most critical decision to be made.[8] Establishing a marina within a converted commercial harbor, such as Lynn's, circumvents some site problems to be sure, but it alsc creates some problems of its own. So that preliminary cost estimates could be made, a particular section of the harbor was studied (the northern harbor, the most advantageous section for marina development) for the specific site problems it presented.

Building on a site that has been previously used can present additional problems. Leaving aside for a moment the problems encountered with old offshore facilities and silted basins and channels, onshore sites must be cleaned up before new construction can begin. Often, old buildings are difficult or economically unfeasible to renovate or convert and must be removed. If water areas have to be filled, the expense is high and the resulting filled area often quite unstable and unable to bear heavy loads. If pilings are needed for foundations, even greater expenses are incurred. This points up the benefit of beginning with a clear, clean site. But if an undeveloped site cannot be found, an old one can be revitalized and its disadvantages turned to advantages. Over the past decade old docks and wharfs around the world have been turned into tourist attractions and fully operational marinas. St. Katherine's Dock by London Bridge in London is one such example of an extremely successful waterfront project.

[7] Economics Research Associates, Boston, Mass., Market Study for Downtown Gloucester, prepared for the city of Gloucester and the Gloucester Downtown Development Commission, October 1976, pp. VII 12.

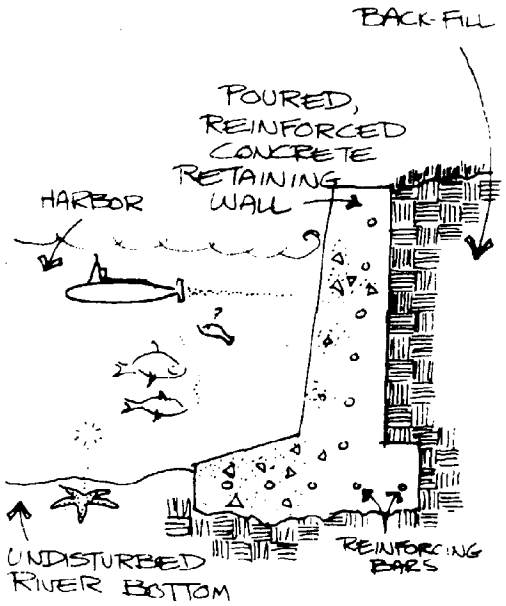
[8] Sizing requirements and standards are discussed in Donald W. Adie, Marinas, A Working Guide to their Development and Design, Boston: Cahners Books, 1975, and Walter Isard, Ecclogic-Economic Analysis for Regional Development. New York: Free Press, 1972.

The soil on the proposed Lynn site is almcst 100 percent fill material, and the area is still being used for soil dumping. This means the load bearing capacity is minimal and will nct support new construction. Either pilings must be embedded in the sublying strata for foundation support or some of the land area has to be removed. In either case, the site work will be expensive.

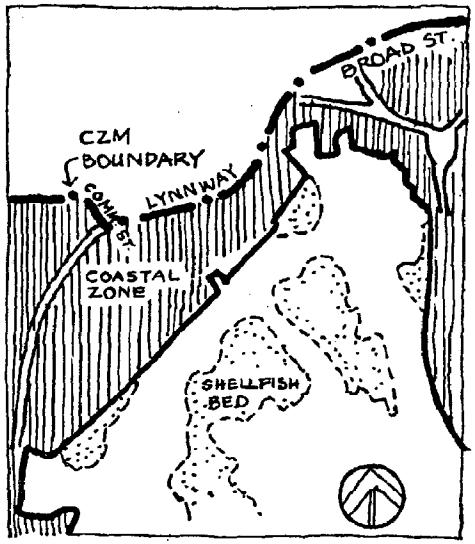
If the dredged material turns out to be of good granular quality, it can be used as fill to replace the existing porous land fill. This will also reduce the dredging costs a substantial amount by saving transportation ccsts of hauling the dredged material to another disposal point. But until extensive soil tests are completed, nothing specific can be said.

At the water's edge a bulkhead or quay must be constructed to keep the soil from eroding into the water. There are two principal types of walls, sheet and gravity. The sheet wall is driven into the bed and braced by piles, shoring or deadmen; the gravity wall retains soil simply by its weight and the shape of the wall. Both types are expensive, and, either type, will probably be one of the largest single engineering expenses for the entire marina. The respective cost for each wall depend on several factcrs, such as: height of soil; water and the tidal range; quality of retained soil; relative pressures and additional stresses; choice of construction method; positioning of the bulkhead; appearance; and maintenance.

Water site preparation is bound to incur more expense and effort than land side preparations. Dredging, alone may cost more than the land side preparation. Permission to dredge must be obtained from the state and federal governments, and these procedures can be lengthy.



Permits must be obtained, because dredging may have adverse environmental effects. It will remove organisms from the harbor's food chain and if mechanical dredging is employed (explained below), it may, generate turbidity which blocks the light necessary for photosynthesis for vegetation and clogs the gills and siphons of marine fauna.[9]



In the case of Lynn, the Massachusetts Office of Coastal Zone Management has designated most of the north harbor as shellfish beds and, as such, a significant resource. The shellfish beds are recognized as contaminated and provide no useful harvest; nonetheless, they are protected from dredging under Policy 1 of the Massachusetts CZM Plan. Requests to dredge a protected area are conditioned or denied on a case-by-case basis under this policy.

To initiate dredging (or any water site preparations), the applicant, Lynn, must file a statement of intent with the town conservation commission. The commission acts under the Wetlands Protection Act, MGLA Chapter 131, section 40, and in turn files its own petition with Waterways, in the Department of Environmental Quality Engineering (DEQE). DEQE then polls interested state agencies which must agree that the proposed project does not adversely effect the coastal zone. The state agencies that might have an interest in the dredging of Lynn Harbor are the Division of Marine Fisheries and the Division of Water Pollution Control. Hearings are held on the application, and, if the state feels the information is not adequately researched, it may request an Environmental Impact Statement. This slows down the permit process; therefore, it behooves the client to have researched the project extensively, well before the hearings. When the State is satisfied the proposed project meets the approval of all the interested agencies, a Chapter 91 license is issued and validated for a period of five years.

[9]Massachusetts Executive Office of Environmental Affairs, Massachusetts Coastal Zone Management Preview, A Program for Preliminary Review, November 1976, pp. 2-B/27.

That completes the procedure for obtaining state approval. Federal approval for alterations carried out in navigable water must come from the Army Corps of Engineers. The Army Corps must issue 404-10 permits[10] which authorize activities such as filling navigable waters, sinking pilings, attaching moorings, placing outfall pipes, and digging tunnels.

Finally, the Massachusetts Office of Coastal Zone Management will review any permit issued by a federal or state agency not within EOEA, as part of the MEPA and NEPA review process. The review can evaluate any portion of the project for its impact on the coastal zone.

PRELIMINARY DREDGING COST ESTIMATES

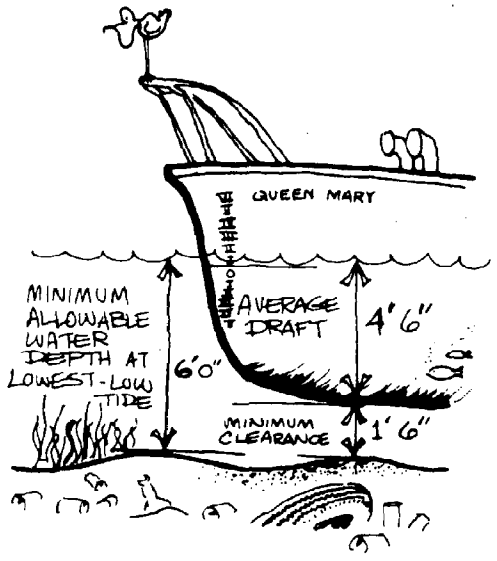
Dredging, is also a difficult cost to estimate. The two dredging methods used are mechanical and hydraulic.[11] Hydraulic dredging picks up a slurry of water and dredge material and transports it via pipeline to a nearby disposal site or to a vessel which carries it to a disposal site. This method is most optimally employed when the dredged material is placed on land for shore improvements and maintenance.

Mechanical dredging lifts the material by bucket or shovel and places it on a vessel to be dumped offshore in one of the seven approved open water disposal sites. One of these sites may also be used for disposal of polluted or contaminated material.

Dredging costs generally run from three to seven dollars per cubic yard of displaced material. But a reliable estimate can be made only after the type of material to be dredged is

[10]United States Codes Annotated 1344, Sec. 404 Federal Water Pollution Control Act of 1972, and Sec. 10, Rivers and Harbor Act.

[11]Basic information about dredging comes from phone conversations with the U.S. Army Corps of Engineers, Waltham, Mass. and Massachusetts Executive Office of Environmental Affairs, Massachusetts Coastal Zone Management Preview, A Program for Preliminary Review, November 1976, Section on Dredging and Dredge Disposal.



identified, an approved disposal site is found, and a method of hauling is decided upon. If there are no large fragments in the dredged material, hydraulic dredging is cheaper than the more commonly used mechanical method, because the dredged material is dumped onshore and there are no hauling costs. If the material being removed is rock, then blasting will be necessary, and the cost will be higher. A land site is generally sought first for dredging disposal. Two uses for dredged material are sand for beach replenishment and granular quality material for substrate or for fill behind a bulkhead. But in the event the dredged material is contaminated, it must be hauled to the foul area thirteen miles east of Boston Harbor and dumped. And in the case of Lynn Harbor, where there are contaminated shellfish beds, the dredged material will probably have to be hauled by barge or scow to the foul area.

If a site in the north harbor is chosen for marina development, then the area that must be dredged is approximately seven acres, including the water area currently being used by Lynnway Marine. The average draft of pleasure craft likely to be in the harbor is 4' - 6"; the maximum subnormal tide is 1' - 6"; and the allowable clearance and siltation should be no less than 1' - 6". Assuming the area to be seven acres and the desirable depth to be seven and one half feet, then the volume of the material to be dredged is:

7 acres X 43,560 ft.^{2} X 7.5 ft./27 ft.^{3} = 84,700 yds.^{3}

At three dollars per cubic yard, the cost is 254,100 dollars. At seven dollars per cubic yard, the cost would be 592,900 dollars. The deeper the harbor is dredged, the deeper the draft that can be accommodated, and the greater the expense. This increased depth will invite a class of

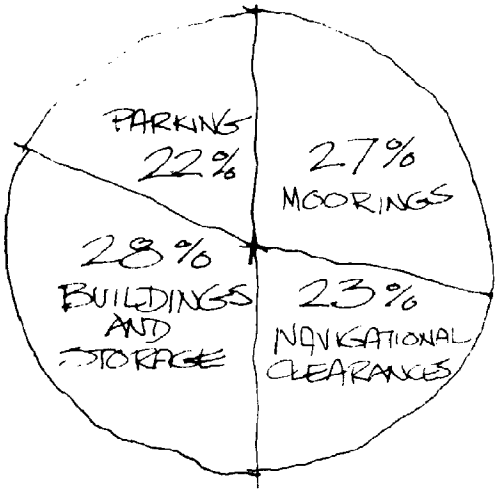
larger, more expensive craft, whose owners, presumably, will spend more money in Lynn.

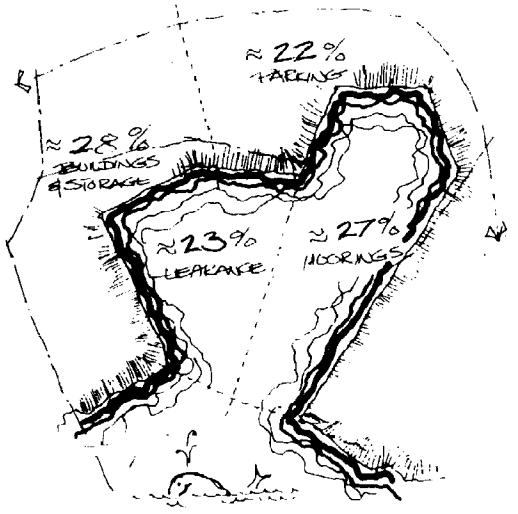
Using the figure cited earlier, 1500-2000 dollars per slip development cost, a new 200 slip marina would cost a maximum of 400,000 dollars. The dredging cost estimate given here, if accurate at the high end of the scale, already exceeds the cost estimate for marina development given by Economics Research Associates. The conclusion, here is that marina development in Lynn Harbor will be expensive because of the present site conditions. However, the dredging costs will be incurred for any water-related use that is developed in the harbor, and with a more commercial or industrial use, more extensive dredging will be necessary. A high price for site preparation should not be different for marina development, but the cost should be realized from the outset.

Dredging for recreational purposes is a 50-50 proposition; Lynn pays half and the federal government pays half. But if Lynn can show that the dredging is for commercial purposes, then the government will pay a larger percentage. Finally, whatever plan is adopted, the Army Corps of Engineers will maintain the dredged areas with federal funds.

DESIGN CHARACTERISTICS FOR ONSHORE FACILITIES

One of the earliest decisions a marina designer must make is how to divide his space between land and water activities. Ideally the ratio should be 1:1. A suggested breakdown is 27 percent moorings and 23 percent clearances constituting the water portion. The land area devotes 22 percent for parking and the remaining 28 percent for building, storage and maintenance etc.[12]





[12]Donald W. Adie, Marinas: A Working Guide to their Development and Design, Boston: Cahners Books, 1975, pp. 291.

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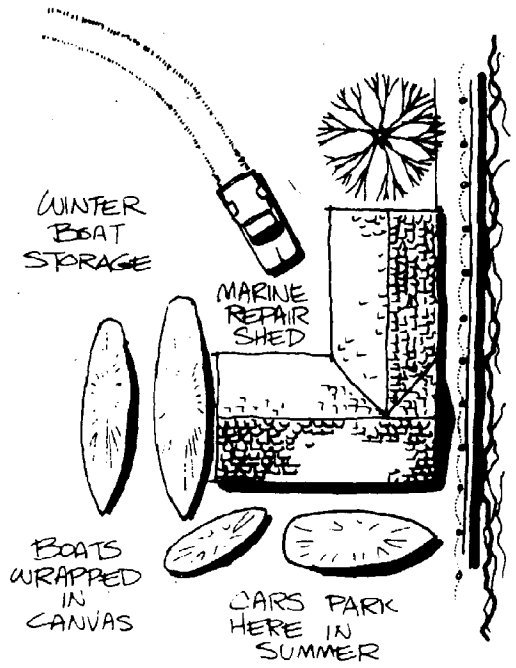
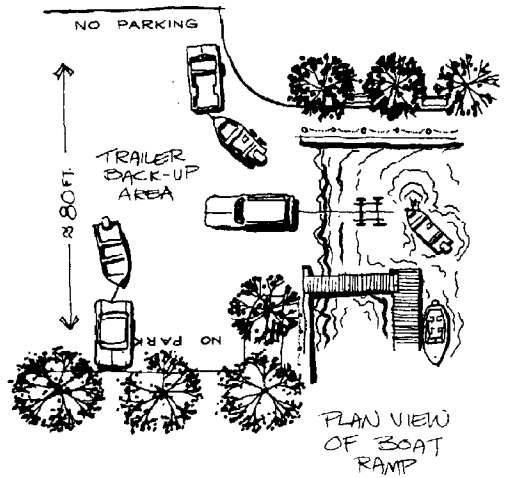




One of the biggest problems designers encounter in any development is parking, and a marina with little vehicle turnover but high volume is no exception. Ideal design plans, as mentioned earlier, designate over one-fifth of the total space of a marina for parking and that same space can be used for boat storage and maintenance during the off-season. The hard surface of the parking lot allows boat owners to drive their cars alongside their stored boats for routine maintenance work. Winter storage also produces additional income for the marina.

It is not necessary to have parking immediately beside the water, but it would be suitable to have a loading/unloading area near the access points of the piers for use by the boaters to load or offload their gear and passengers from the cars. This area would, in effect, be a dropoff area and would allow temporary parking only. The parking area itself could be located away from the dropoff perhaps near the entrance of the marina from the public street. However, if the hardsurfaced parking lot were to be used in the winter to store the boats it would be more convenient to have the parking close to the maintenance and repair facilities, which, out of necessity, should be located as close to the water as possible.

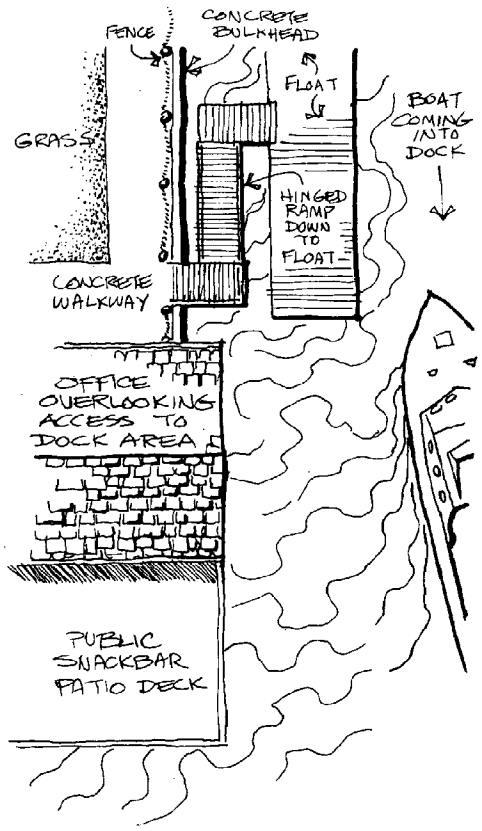
If a launching ramp is to be built in the marina, thus attracting trailer carried boats, designers will encounter several problems. Space will have to be allocated for boat owners to temporarily park the trailers, in addition to the space allocated for them to park their cars. Second, the transportation thoroughfares within the marina will have to be made wide enough so the larger vehicles can be maneuvered. And third, as a result of allowing for the first two considerations above, a launching ramp will diminish space in a marina that might have been used for other purposes such as parking.

Combining facilities on the Lynn waterfront is not only possible, but also an excellent way to begin marina development. Since the city already possesses a public launching ramp, planning for its full utilization should cut the initial expenses considerably. Launching ramps are the easiest means of launching small craft and providing access for middle-income trailer-boat owners, whose numbers are also steadily increasing. Using the existing launching ramp will cut down on the amount of paved surface required by the marina for trailer storage and maneuverability.

The size and number of access points to marina property should be convenient for patrons but also embody sound security measures. Controlling access to slip areas is very important; therefore, the points of entry near slips should be kept to a minimum.

Designers should be able to house all the facilities for the marina in one building. Within the structure, space should be allocated for the administration office, an office for the harbormaster, an information area, a clubroom, lavatories, showers, dressing rooms, drying cupboards, and lockers.

If designers desire a more sophisticated marina--in order to attract more people and increase revenue--a licensed bar, a snack bar, and a gear and trailer store can be included in the plans. For greater economy, the repair shop can be attached under the same roof. And finally, a covered walkway and an area for sitting and watching can be built which, indirectly, will increase the security in the boat berthing area, as marina users themselves watch the boats.



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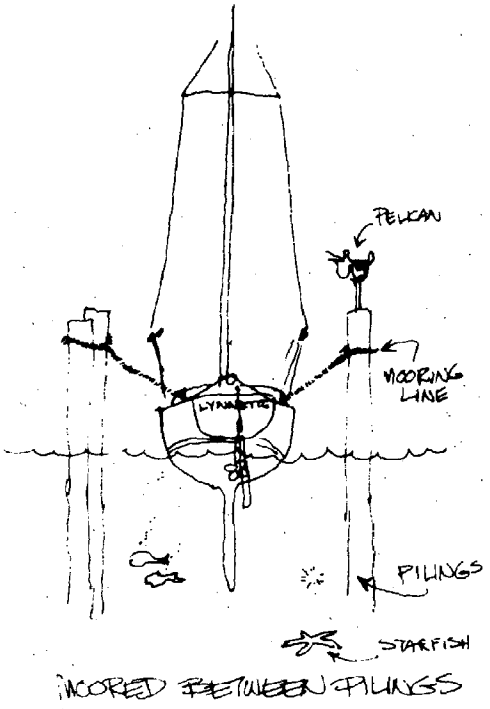

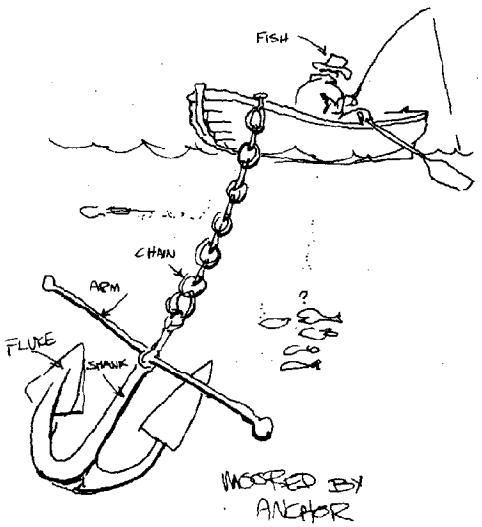

DESIGN CHARACTERISTICS FOR OFFSHORE FACILITES

Offshore facilities include all docks, mooring buoys, and other items used for securing boats to designated locations. There are five methods for securing boats; parked on dry land or in multi-story racks; moored between piles; moored to a permanently attached mooring; anchored; or berthed in slips. Freely anchored craft occupy nearly 100 times as much space as the same craft berthed in a slip. And since the water surface area of Lynn Harbor is limited, it would be realistic therefore, to design a marina with slips in mind.

In order to select the best mix of docks and mooring spaces, Lynn designers should gather more specific information on the number and size of boats that owners are likely to bring into Lynn Harbor. Once this information is provided by a market survey, designers will be able to fix the optimal length, breadth, and draft mooring dimensions in the marina.

CONCLUSIONS

The harbor is particularly well-suited for recreational boating, being well-sheltered on three sides by natural barriers; the fourth side provides good access to the ocean.

The parcel proposed in this report is small in area, and will require costly and extensive corrections to bring the site up to the quality where facility construction could actually begin. Therefore, it is recommended that other land parcels be examined such as the land presently occupied

by the New England Power Co. This large parcel could conceivably be bought by the City of Lynn and some apportioned up for a marina facility with the remaining land sold to a private developer or developed by the town itself based on the results of a market study.

If the proposed parcel in the north end of the harbor is the only available land for marina development it would be advisable to investigate the possibility of aquiring the adjacent land to the north, presently occupied by an automobile dealer. The two acre parcel as it stands now is not large enough to generate enough income to make the development feasible. From the research presented here, if undertaking new development, Lynn should plan on at least a three to four acre land parcel for a marina that can accommodate 200 boats.

Harbor frontage will most likely appreciate in value. If a marina were developed and were successful, the time might come when expansion for the marina facility would be desirable. In addition to owning the waterfront strips of land surrounding the north end of the harbor, if the adjacent land were aquired, the city would be in a position to actively improve the visual image of this area which is presently committed to strip nonwater related development. By purchasing the adjacent land, the city could create a visual easement and begin a solid visual connection to the Central Business District. A park setting could be established at the main thoroughfare intersection which would improve its current freeway image.

A marina appears to be a viable harbor revitalization project fcr Lynn for several reasons.

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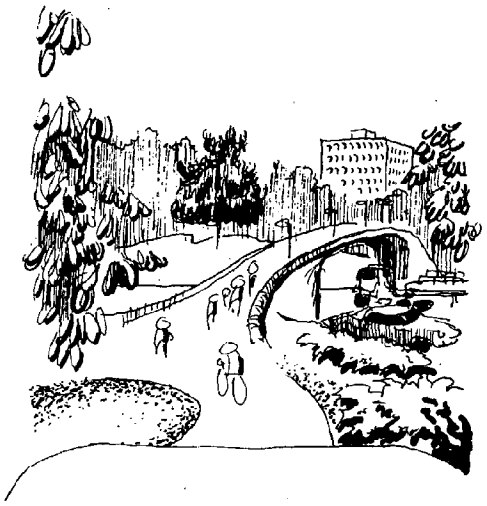

One because, there is a regional demand for mooring and storage space, and the projections are that this demand will remain unmet for some time to come.

Two, there is a psychological boost for the city in terms of new harbor development because marina activities are visible and attract people to them. Increased activity in the area where there has been none will be the first step in encouraging follow-up development. A public activity, such as a marina, will encourage the residents of Lynn to take a more active role in harbor development as they begin to realize that the harbor is a pleasant recreational place for them to spend their time. If a northern harbor location is chosen for the development, the marina will serve as a connection from the harbor to the central business district.

Three, there is a likely synergistic effect. As people are attracted to the marina, there will be a need for recreational facilities, small specialty retail establishments as well as a variety of restaurants. These activities will generate additional tax revenues for the city. As these amenities become more competitive with those of marinas located elsewhere in the vicinity, Lynn will be able to attract some of the excess demand. As the quality of the amenities increases, Lynn will attract more affluent boaters who in turn will spend more time and money in Lynn.

Building a marina is a realistic venture and the city of Lynn ought to consider it as their next step in harbor revitalization efforts. It will provide a good focus for community involvement which can be aimed at the city as a whole.

11

Conclusions and Suggested Work Program

Conclusions and Suggested Work Program

Unless a diligent and coordinated work program is initiated on the Lynn waterfront, there will be no improvement over the present level of nonuse and disrepair. This volume has begun to catalogue and make recommendations for immediate, as well as future, harbor development. The conclusions, summarized here, must be translated into a specific work program. Harbor resources, development options, as well as market and community values need to be fully examined and synthesized into a priority mix of uses, and policy and implementation measures for development.

An example for this work program is included here, but it should be added to or modified as objectives for development become clearer. Some parts of this work program have been initiated and some are nearly finished; others will take concerted efforts over a long period of time. The tasks should be undertaken and carried out by Lynn officials and citizens rather then left in report form and filed away. Only if the tasks are spelled out and assigned to various officials and community groups, can change be realized. Some activities which should be initiated immediately are as follows:

GENERATION OF PUBLIC PARTICIPATION IN AND ENTHUSIASM FOR IMPROVEMENT OF THE HARBOR AND CITY

Lynn officials must solicit support from Lynn residents in order to correctly assess their pricrities and attitudes. The accuracy of the assessment is important so that they may later be translated into development policies that are supported by the entire community. Residents who are included in the public participaticn process manifest and spread enthusiasm to other residents; a necessary ingredient of development. The entire community should feel that the harbor is available to them as a place to wander, visit and enjoy. The local press could be very influential in bringing the pctential for development before the public and generating enthusiasm for improvement of the harbor area.

CATALOGING OF HARBOR ELEMENTS

The Department of Community Development, or other City agencies should maintain ongoing efforts toward cataloging informaticn about the harbor. The Data and Information Bases should be completed and all maps should be regularly updated. Proper decision making will happen only as a result of proper and adequate background information.

DEVELOPMENT OF A SET OF POLICIES FOR HARBOR DEVELOPMENT

At present, no set of development policies is available to guide Lynn decision makers with the direction harbor development should take, or to evaluate development proposals placed before them. A set of policies that specifically applies tc harbor development, and reflects the intent and attitudes of the community at large, is necessary. Policy

recommendations are presented in Chapters Seven and Eight based on the work done by M.I.T. The City Council can accept this set or they can write their own, but until the Mayor and City Council adopt and adhere to a consistent set of policies, development, if any, will continue in an uncoordinated fashion.

Important primary aims such as increased tax revenue, increased employment opportunities, public access/involvement in waterfront activities, and the effect of harbor development on the rest of the city must be weighed and discussed so that the development strategy chosen, respects the desires of the community.

PURSUIT OF OPPORTUNITIES STEMMING FROM THE MASSACHUSETTS COASTAL ZONE MANAGEMENT PLAN

With the passage of the State Coastal Zone Management Plan, Massachusetts' cities and towns on the coast will fall under the jurisdiction of the Massachusetts Office of Coastal Zone Management (Mass. OCZM). Lynn should identify an agency through which it can actively participate with Mass. OCZM, and thereby seek their financial and technical assistance, powers of legislative intervention, and interagency interfacing.

In theory, the CZM Plan will minimize and make consistent the legal procedures for development and Lynn should put forth an effort to work with the Plan. There is a feeling on the part of certain Lynn officials that the Plan will offer them another level of State bureaucracy and no benefits. This attitude should be quelled. If the Plan is strongly implemented at the state level and Lynn chooses not to advocate the Plan, the city will have to provide its own

resources for development while Mass. OCZM gives these resources away to other communities.

The Plan is biased toward environmental preservation, not economic revitalization (a prime goal for Lynn). Lynn should meet with CZM planners to discuss places in the Plan that contradict or are unreasonable in the context of the Lynn waterfront. The Plan does not state well the means to implement the urban waterfront development it professes to support. Lynn should take an active role in explaining where the Plan is not sensitive to their needs. Mass. OCZM planners have no way of determining what Lynn needs without Lynn input. The Plan is biased toward the environment because of the dialogue that has taken place between Cape Cod towns and Mass. OCZM. Lynn should initiate discussion with Mass. OCZM to inform them of urban waterfront needs.

DEVELOPMENT OF A MARINA

One or two projects should be started to provide the community with a focus for harbor development. A marina is one of the best alternatives for eliciting broad interest in the harbor. First, because of its public nature, it will draw residents to the waterfront, and second, it will fill a specific need since there is a shortage of mooring space on the North Shore, and the demand exists for marina development.

A feasibility study (that goes beyond the work begun here), must be undertaken to determine the following: the extent of the demand for mooring and slip space, the actual availability of a parcel of land of adequate size and location, the requirements for obtaining the permits necessary to carry out water related changes such as dredging and envi-

ronmental quality, and the availability of funding. For the latter, there are several options. In addition to the programs listed in Appendix V, Lynn should also approach the Massachusetts Office of Coastal Zone Management. Help with dredging related activities will be available from the Army Corps of Engineers if Lynn can convince them of serious intent with regard to recreational boating.

Site selection for the first harbor development project is critical. In order to make new development as visible as possible and to begin to develop the link between the harbor and the Central Business District, a northern harbor parcel should be chosen. The parcel analyzed in this report is too small by itself but, would prove to be an excellent location, if combined with contiguous land. It is a desirable location because of its naturally sheltered position in the harbor and its proximity to the turning basin.

Marina development is an important first step in the physical upgrading of Lynn Harbor. Lynn officials and the press should not allow interest in this project to wane.

An image of reasonable optimism and a "beginning" must be created. If one new desired development can be started, if an appropriate symbol of the harbor can be prominently displayed (for example painted on the white Boston Gas tank), if the media are able to inform citizens about potentials that need discussion and focus news articles on harbor activities, if some place to sit on the grass, eat a lunch, and watch the harbor can be provided close to downtown, if some of these things are done there will be a "beginning". Analysis and study must go on simultaneously, but the community must sense that the harbor should be thought about today. With this sense the community can begin the discussion needed to influence development policy.

SUGGESTED WORK PROGRAM

The work program that follows is based on suggestions and conclusions that are made throughout this report. This is not meant to be a rigid program. There will always be changes in circumstances and issues to which the city will have to respond. For the moment, this work program reflects the conclusions of this study. But what remains most important is the idea of having a work program. Changes over time in the overall intent of harbor development simply mean that the corresponding work program must also be updated. There should always be a work program to illustrate the current intent of harbor development.

Missing from the program presented here is the assignment of specific persons to specific tasks. Identification of individuals and tasks is a priority job. The work program is useless unless the work is being carried out--specific people doing specific work. Interest in harbor development will certainly wane, if efforts are slackened. If no one is busy on the waterfront, then the waterfront won't be busy.

The following paragraphs summarize several specific aspects of the suggested work program and identify major tasks that should be carried out if the objectives are to be achieved.

A. Responsibility for Harbor Decision Making

Objective: Delegate responsibility of the harbor front to a city agency or a committed group of people from several agencies in addition to committed citizens.

Description: A core group of people who are responsible for task assignment, research, evaluation, and decision making concerning the harbor.

Major Tasks: These are broken into two sections:

1. The Mayor and City Council must locate and give harbor jurisdiction to an agency or group as described above. Candidates might be, the Port Authority, Planning Department, Department of Community Development, a City Council Committee, Harbormaster, interested citizens, or any combination of these groups.
2. The responsibilities of the group are to:
   a. Assign tasks of work program to individuals to carry out.
   b. Provide a public forum on a regular basis for citizen concerns.
   c. Inform the community at large about ongoing harbor development through press releases and City Council meetings.
   d. Evaluate and make recommendations on all harbor development.
   e. Be available for consultation and advise the City Council and city agencies.
   f. Meet with prospective developers and waterfront users to inform them about Lynn Harbor aims and aid them with their development endeavors.
   g. Be knowledgeable about federal state and local regulations, laws, and permit processes. Field all harbor related questions and be conscientious as harbor resource guides.

B. Complete Harbor Data Base

Objective: Centrally locate descriptive harbor infcrmation as an aid to development evaluation, plan making, decision making, and public participation.

Description: Review of existing situation to show implications and constraints for harbor develcpment.

Major Tasks:

1. Survey land use and map building conditions.
2. Complete ownership, assessment and tax information records.
3. List recent land sales in harbor area.
4. Survey vacant leaseable space on harbor.
5. Construct base map (1" = 200' and 1" = 50').
6. Computerize all harbor land and use information.
7. Acquire aerial photo of area (1" = 200').
8. Complete a slide show description of existing use of harbor and of develcpment potential.

C. Establish Development Information Base

Objective: Carry out the research necessary to gather information needed for plan making, development evaluation, decision making and public participation. Also evaluate impacts of future uses and determine a desirable mix of uses for the present and the future.

Description: Basic information on land utilization and economics of possible harbor uses.

Major Tasks:

1. Complete information gathering on the following subjects:
   a. Onshore develcpment related to offshore oil and gas development,
   b. Harbor housing development,
   c. Fish processing industry,
   d. Commercial fishing/shellfishing,
   e. Commercial Uses-motels/restaurants, and
   f. Industrial requirements (General Electric Company, New England Power Company, Gas Utility, etc.).
2. Complete associated information gathering for harbor development, e.g., dredging requirements, limitations, public pier facility requirements, and permit processes.
3. Conduct water depth and water quality survey.
4. Complete feasibility studies for marina development:
   a. Market demand study,
   b. Site selectien process,
   c. Applications for permits, and
   d. Meetings with marina developers for ideas, advice and possible contract.

D. Expansion of Public Participation in Harbor Zone Development

Objective:

1. Solicit broad public support for harbor development programs.
2. Sensitize elected officials to community attitudes and priorities for development.
3. Reestablish community identity and pride in the harbor.
4. Structure a dialogue among citizens, businessmen, civic organizations and elected representatives in order to develop consensus around the approval or implementation of specific harbor proposals.
5. Keep residents and businessmen informed about what is proposed for the harbor.

Description: Participation can be structured through an existing city department or through a more independent harbor development committee or task force appointed by the Mayor or Council under the sponsorship of the Planning Department, Industrial Commission, Port Authority, Department of Community Development, or the Chamber of Commerce.

Major Tasks:

1. Organize extensive media coverage of harbor activites.
2. Organize a harbor development workshop attended by land owners, businessmen, citizens, city officials, etc. to begin a continuing dialogue about the harbor's future.
3. Organize an ongoing public forum (possibly the city council meetings) to inform the

general community about harbor development efforts and to invite community interaction with the development process.

4. Utilize school programs and projects to focus attention on the harbor (e.g., video tape reports, slide shows, pollution impact projects, harbor histories, sea life reports, clean-up campaigns, and a marine sciences program in the schools).
5. Hold small information meetings with interested citizen groups.

E. Synthesize Harbor Data and Information into Development Policy

Objective: Adopt short and long range city policy for harbor development to guide present actions and decisions, and evaluate future proposals.

Description: Analyze the fit between Lynn harbor resources and constraints, and development requirements and opportunities. The following elements will be useful in analyzing this fit:

- Issues raised by the community participation process to sensitize Lynn officials to citizen priority,
- Predicted needs for activities and space from the information gathering programs,
- Intrinsic suitabilities of harbor land, and
- Value criteria for selection of uses.

Physical concepts are possible based on above elements.

Major Tasks:

1. Gather and discuss information through some form of public participation.
2. Analyze detailed information collected.
3. Test conclusions of technical analyses with citizen groups and elected officials.
4. Draft the technical analysis and concept formulation with community issues and values into recognized public policy.
5. Discuss newly drafted policies, and policies presented in this volume at City Council meetings.
6. Formally adopt policies.

F. Short Range Implementation of Improvement and Development Ideas

Objective: To improve the immediate visual image of the harbor for both residents and potential developers.

Description:
1. Paint an appropriate harbor symbol on the Boston Gas Tank.
2. Upgrade the park area owned by the New England Power Company near the MDC pier.
3. Establish an interim public park, a grass area with picnic benches, boat pennants and ports at the north end of the harbor.
4. Encourage developers to put up attractive signs announcing their proposed improvements.

Major Tasks:
1. Produce short movie of views of gas tank.
2. Upgrade the park area owned by the New England Power Company near the MDC pier.
3. Sponsor local contest to develop harbor symbol.
4. Negotiate with owners of unused, overgrown, land for a temporary park.
5. Negotiate with known developers.

G. Long Range Implementation of Development Policy

Objective: To increase the number of jobs and property tax income from the harbor area. To realize the potential of the harbor as a unique limited resource and use it as a stepping stone in the revitalization of downtown Lynn.

Description: Coordinate the programming, design and construction of public projects. Seek out and coordinate the work of selected private developers.

Major Tasks:

1. Generate illustrative schematic concepts of development, e.g., development prospectus.
2. Define and implement development controls and incentives, e.g., harbor district zoning, bulk and view controls, and special bonuses.
3. Seek project funding, e.g., bonuses to private developers in exchange for public amenities, federal program grant applications, and state appropriations.
4. Negotiate with private developers.
5. Improve communication channels with state and regional agencies.

H. Coastal Zone Management Plan

Objective: Adopt the State Plan as an integral part of Lynn coastal planning.

Description: Take advantage of new State programs, their technical assistance and funding cpportunities.

Major Tasks:
1. Have Lynn Harbor redesignated from Port to Developed Harbor status.
2. Apply for the special designation: Special Assistance Development Area.
3. Approach Mass. CCZM for study money and technical assistance.
4. Alert Mass. OCZM to places in the Coastal Zone Management Plan that don't either meet or address Lynn needs.

Appendices

Appendix I

DESCRIPTIONS OF NORTH SHORE WATERFRONTS

SALEM

The Salem[1] waterfront is much larger than Lynn's, but the division of land uses on the shore is similar for both, except that Salem has a greater residential use and a lower percentage of vacant land. Some commercial fisherman and about a dozen commercial lobstermen work out of the South River area of Salem near the downtown where a channel is dredged to approximately seven feet. In addition, the New England Power Company operates a large electric power station and oil storage facility supplied regularly by oil tankers using the 32 foot deep Salem Channel. Large sections of the Salem waterfront are, however, isolated from recreational or commercial boating depth water by expanses of mud flats and shallow tidal flats. Although numerous boat clubs and water access points exist, only about 260 boat slips are available and only 107 mooring locations are documented.[2]

The limited vacant land on the Salem waterfront is not easily usable for industrial or commercial development because of its existing use as public or semi-public open recreation space or because of adjacent residential uses. For example, the vacant 30 acre former Coast Guard station

[1]Information about Salem is based on an interview with David Lash, Assistant to the Salem City Planner, January 22, 1977, and Blair Associates, Salem, Massachusetts, Waterfront Study, 1963.

[2]Boating Almanac, 1976.

on Winter Island is in a poor wind location for active recreational boating development, has numerous community demands for use as a campground and park, and is affected by odors from overflow sewage effluents in Cat Cove.

Even with these problems, there has been some discussion of recreational boating, apartment housing develcpment or sports/health club type facilities proposed for the location. Salem has taken control of the site and supports the proposal to develop camping and boating facilities there.[3]

Proposed developments on the Salem waterfront include a marina and beach in Collins Cove and the Pickering Wharf development. The Collins Cove proposal by the city's Waterways Advisory Board is to create 500 boat slips by dredging and also a beach facility and parking area by filling in the cove. There are no city funds for the project, the environmental consequences of extensive dredging have not been studied and CZM is recommending relocating the project to some alternative area with deeper natural water.[4] This project seems ulikely.

The Pickering Wharf proposal, however, is very real. The site, 4.7 acres in size, was formerly an oil tank farm adjacent to the Salem Maritime National Historic Site on the South River waterfront. It was acquired by the city for 280,000 dcllars (one-half the appraised value due to the arrangement the city made with the cil ccmpany to allow them to relocate the tank farm elsewhere on the waterfront), cleared and resold to the developer for 389,000 dcllars. It will be developed into 10,000 square feet of commercial craft and specialty shops and three restaurants (approximately 30,000 square feet), 47 to 60 one and two bedroom luxury townhouse apartments over the commercial space, 50 to

[3]Massachusetts Office of Coastal Zone Management, Preliminary Draft, Lower North Shore Regional Chapter, February 1977.

[4]Ibid.

60 boat slips for apartment residents, and limited parking. The development, seen as an important regenerative waterfront link in tourist activity from the renewed downtown area to the historic House of Seven Gables area, is projected to cost up to four million dollars (financed by Salem banks) and is intended to be carried out in small stages.

BEVERLY

Only a small portion of the Beverly[5] waterfront has good access to water deep enough for commercial or industrial boat traffic. The main harbor area is a small strip at the mouth of the Danvers River on a 23 foot deep channel. The land is used by a liquid chemical storage tank farm which receives approximately 10 percent of its chemicals by water (425 foot wharf and 300 foot storage shed), four recreation boating marinas with 315 boat slips and 55 moorings, a lobsterman's pier, and commercial fish sales outlets. The secondary section of the Beverly waterfront lies along the Bass River. Typical uses along the river and its onetime, nine to fourteen foot channel, include: a public park, launching ramps, a yacht club, a boatyard, a shoe machinery factory, warehousing, assorted non-water related commercial activities, and housing.

The vacant parcels on the Beverly waterfront are constrained in their potential use by channel access and adjacent uses. The Boston Gas site is a four to five acre vehicle maintenance area at the head of the Bass River. It has poor channel access and is unlikely to be sought by boat related commerce or industry. A 20 acre vacant parcel on the western bank of the river is adjacent to residential areas and an elementary school, and the community desires to preserve it as open space.

[5]Information about Beverly is based on an interview with Mr. Dan Bumagin, most recent Beverly Planning Director, January 19, 1977.

Beverly is not interested in industrial development of its waterfront areas (by offshore service industries or fish processing, etc.) but is interested in visually upgrading its main waterfront business area adjacent to the residential historic district. There are no major developments currently proposed for the waterfront, and past city ideas for a small hotel, museum and theaters on the harbor, fishing pier with a restaurant, as well as 50 units of luxury housing on the chemical storage site, were abandoned three years ago.

GLOUCESTER

Gloucester[6] is the recognized major port and fishing industry center of the North Shore region. The inner harbor area is primarily industrial in nature, although some commercial areas coexist and some residential areas occur on the east Gloucester side. In addition to handling the local fishing fleet of 70-130 boats, the harbor also handles foreign freighters which carry principally frozen blocks of fish and some bulk dry goods. The harbor contains 20 foot channels and an 18 foot channel in the harbor cove. It has an entrance width of 1,200 yards, 15 acres of anchorage at a depth of 15 feet, piers and berths to accommodate vessels up to 22 foot draft and over 400 feet in length, and a 970 foot long state fish pier.

The major industry on the harbor is fish processing and storage with several facilities combining to provide the capacity for cold storing 100 million pounds of fish and quick freezing one million pounds per day. Frozen fish blocks are processed, packed and distributed, in addition to fresh fish. However, in addition to industry, recreational boating is a major activity. Gloucester's harbor, cove and

[6]Based on interviews with Dale Pope, Gloucester Downtown Development Commission Planner, January 27, 1977, and Jack Sheady, Executive Director of the Gloucester Housing Authority, which is also the Urban Renewal Agency, January 27, 1977. Also based on information from the Gloucester Downtown Development Commission, Phase 1 Comittee Report Gloucester Housing Authority, Urban Renewal Plans for the Waterfront Urban Renewal Area and, Massachusetts Office of Coastal Zone Management, Preliminary Draft, Survey of Uses - Preliminary Draft of Commercial Fisheries, December, 1975.

marina areas currently provide mooring space for approximately 1,000 boats and have an additional 745 slips (estimates vary slightly).

The vacant land that exists on the inner harbor is primarily the result of two urban renewal projects, because the harbor is a highly developed area. In the harbor cove area, which is adjacent to town public parking and a restaurant, one site of 1.6 acres remains vacant from the first renewal project. Numerous proposals have centered on this site, including retail development and a 100 unit hotel. The hotel proposal has limited market feasibility,[7] and the city is currently evaluating the proposal along with alternative industrial uses.

In the second renewal area at the head of the north channel part of the inner harbor, clearance has provided approximately 7.25 acres of land that, although vacant at present, is felt to be committed to use within one to two years for new fish processing and cold storage facilities and new wharfs for the fishing fleet. In addition, the city has had strong interest expressed by four firms wanting to build fresh fish operations. Both vacant sites mentioned have good transportation access on a rebuilt street to Route 128, and all utilities will be available at the edge of the sites.

In addition to the urban renewal sites, the city plans expansion and improvement of the state fish pier for which the U.S. Economic Development Agency has allocated approximately eight million dollars. Some other vacant parcels exist on the shoreline in the outer harbor but are well removed from downtown. Potential exists for housing development in these areas, but no proposals are current.

[7]Economic Research Associates, Boston, Mass. Market Study for Downtown Gloucester, Prepared for the City of Gloucester and the Gloucester Downtown Development Commission, October 1976.

BOSTON

A brief mention should be made about the type and extent of land and facilities available for development on the Boston harbor. Although Boston harbor areas are of a different scale and context than other communities on the North Shore, they do potentially provide alternative locations for some of the uses Lynn may wish to attract.

The primary development areas available are in the Charlestown Navy Shipyard and the South Boston Naval Annex, with some additional possibilities in East Boston and on or near a renovated Massport fish pier (fish processing and unloading).

The Charlestown Shipyard consists of 84 acres of land and piers, and 46 acres of water on the main harbor channel (40 feet deep) with over three million square feet of existing building area.[8] Although 27 acres of this area are used as a National Historic site, the Boston Redevelopment Authority has proposed that the remaining area be used for mixed development to include 80,000 square feet of retail commercial space, 430,000 square feet of institutional activities, 60,000 square feet of office/incubator industry, a 700-1,000 unit hotel conference center, 1,000 units of new luxury and mixed income housing, and up to 250,000 square feet of light industry.[9] Construction will begin this spring on a three million dollar 20 acre waterfront park in the area, and the city has designated a developer for the housing portion of the shipyard on which rehabilitation work will begin late in 1977.[10]

The South Boston Naval Annex contains 138 acres of land and piers, 89 acres of water on the main harbor channel and

[8]Michael Kennedy, Boston Naval Shipyard: A Reuse Study, master's thesis, Department of Ocean Engineering, M.I.T., 1975.

[9]Boston Redevelopment Authority, Boston Naval Shipyard Charlestown, Planning and Development Program, December 1975.

[10]League of Women Voters information sheet on Charlestown Navy Yard prepared for the Land Use Symposium, February 1977.

almost four million square feet of existing building space.[11] Already Massport is in the process of investigating use of this area as a second container terminal facility for the harbor. The remainder of the site is used as a shipyard and for facilities related to the recent declaration of the area as a free trade zone.

The East Boston waterfront contains a number of scattered parcels that are mainly old Massport piers. Two sites of note are an old Navy area of 33 acres on the Chelsea River (for which no plans have been advanced) and a series of Massport piers that the East Boston community desires for community uses (park, school, housing, etc.).

REVERE

Most of Revere's ocean shoreline is beach and not available for development. This fact has made Revere very concerned about beach quality and the Lynn sewage disposal situation. However, there is a major project underway at the Revere Beach Wonderland Blue Line terminal area. The project entails 1,000 units of high density and high-rise housing and other facilities connected to the beach by pedestrian walkways over Ocean Avenue.

At the mouth of the Saugus River and on the Pines River substantial recreational boating occurs. Three yacht clubs and several marinas offer 300 boat slips and 50 to 100 moorings as well as other facilities.[12] Revere is not contemplating further water related commercial/industrial development.

[11] Michael Kennedy, Boston Naval Shipyard: A Reuse Study, master's thesis, Department of Ocean Engineering, M.I.T., 1975.

[12] Boating Almanac, 1976.

SAUGUS

Saugus[13] hosts a 40 boat lobstering fleet and some recreational boating on the Saugus River. Because the shallow river channel allows boat passage at high tide only, Saugus has petitioned the Army Corps to dredge the river from the Boston Street Bridge to the mouth, and the Corps has agreed to do a feasibility study with CZM support. CZM says there is a high demand for recreational boating in the Saugus River area. The large, open and industrially zoned Saugus marsh will probably be protected as a critical area wetland by the CZM program and local flood plain zoning. Industrial development in the marsh will be severely limited, if allowed at all.

NAHANT

Nahant's[14] isolation, low density nature and recreation facilities make it most concerned about recreation traffic pressure and shoreline quality. In particular, Nahant views offshore mining or heavy ship traffic (especially any carrying petroleum products) into Lynn Harbor as a serious threat to its beaches and shoreline.

Nahant supports a town dock and recreational boating but is not very interested in developing fishing or shellfishing operations. Typical attitudes are expressed in the following statement from Nahant's Growth Policy Report:[15]

> Nahant is a water-oriented community that depends upon clear water and clean beaches for our municipal survival. An oil slick-prone, semi-industrial aura would ruin this. We are not adverse to the

[13] Massachusetts Office of Coastal Zone Management, Preliminary Draft, Lower North Shore Regional Chapter, February 1977.

[14] Ibid.

[15] Massachusetts Office of State Planning, Perspectives on Growth, Excerpts from Local Growth Policy Statements, Interim Report, January 1977, pp. 9.

development of non-polluting industry, which would help the economic health of the entire area, but we are deeply concerned about oil-related developments.

DANVERS

Danvers[16] Harbor is contained within a river area and is quite different from Lynn Harbor. It is a developed recreational boating area and handles some industrial use. There are several marinas with a total of 237 boat slips, mooring for 450 boats during peak recreational periods, a public landing with 33 slips, and a public beach and parking area, and a fuel oil terminal which services 200 oil vessels per year using the 16 foot channel.[17]

Limited vacant land area is proposed to be developed into additional beach and a passive recreational park, and the town seeks to expand the town boat slip area. Danvers Harbor will not compete with Lynn for commercial and industrial development activity.

[16]Massachusetts Office of Coastal Zone Management, Preliminary Draft, Lower North Shore Regional Chapter, February 1977.

[17]Boating Almanac, 1976.

Appendix II

DEFINING LYNN'S JOB NEEDS

To define the population for whom jobs are needed is the first step toward identifying a measure of the effect of various activities/land uses on employment. Job need can be defined by existing employment, unemployment and underemployment.

Table A2-2 outlines the existing employment of the Lynn workforce by industry. The table clearly indicates that the manufacturing sector predominates. This is even more evident when Lynn's employment is compared to the distribution of employment by industry for the Boston SMSA or the state as a whole.

In addition, one should also understand that of the average 16,670 employees in manufacturing approximately 14,000 are employed by General Electric Company. G.E. clearly dominates Lynn employment. Because the future of G.E. is tied to national and internal corporate policy, Lynn's dependence upon G.E. as a large employer is precarious. In addition, many peripheral and supporting industries locate in Lynn to serve G.E., further increasing Lynn dependence upon a single employer. To free itself from this domination, Lynn should seek the development of employment sectors (including manufacturing) that are unrelated to General Electric Co. Table A2-1 also points out that Lynn has relatively few jobs

when compared to the region or the state in several areas, but most significantly in fisheries, construction, finance, insurance, real estate, and services. This lack of jobs does not necessarily imply that these are the only areas in which Lynn should expand, especially if such sectors are unrealistic, suffer chronic unemployment or don't meet other employment objectives, although expansion in these sectors might add some measure of future employment stability to the city. Finance, insurance, real estate, and services probably could expand.

Furthermore, Lynn continues to be a regional employment center even while losing a net total of over 450 jobs annually since 1972. A 1973 Lynn Planning Department report, Economic Base Study, reported that Lynn had 37,000 jobs (33 percent of jobs in the North Shore) and an employed labor force of jobs, primarily in clerical, construction and service occupations. In addition, 9,000 non-Lynn residents come to Lynn each day for jobs in manufacturing, wholesale and retail trade, transportation, communications and utilities. Although the number of jobs and the size of the employed labor force could easily have changed since 1973, the 22 percent to 25 percent outflow and inflow of labor has probably remained.

From this observation one can conclude that new development in the harbor which will provide jobs in the clerical, construction and service areas may allow greater numbers of Lynn residents to work locally rather than commute to distant jobs. Clerical and service jobs are often low paying and are often performed by women, but as additional local jobs they could add to take home pay and general Lynn spending by saving commuting costs and by providing opportunities for part-time work. Job development in manufacturing, trade, etc. may increase the immigration of employees for work but probably will not increase the number living in Lynn.

Table A2-1
Employment Comparison

	Lynn 1975	Boston SMSA 1974	State 1975
Agriculture/fishing	0.2%	0.6%	0.5%
Mining	0%	0.02%	0.05%
Construction	2%	5%	4%
Manufacturing	52%	21%	31%
Transportation/ Communications/Utilities	5%	6%	6%
Trade	20%	23%	27%
F.I.R.E.	3%	8%	7%
Services	18%	31%	24%

Table A2-2
Lynn Employment By Industry, 1975[1]

		Number of Firms	Annual Average Wage	Average Employment	Percentage of Total Employment[2]	Annual Payroll Rounded
A.	Agriculture/ Fisheries	15	$ 9,043	53	.2%	$ 479,300
B.	Mining	0				
C.	Contract Construction	120	12,465	584	2%	7,279,400
D.	Manufacturing	162	13,476	16,670	52%	224,642,000
E.	Transportation/ Communication/Utilities	39	10,971	1,502	5%	16,477,700
F.	Trade	560	7,119	6,338	20%	45,121,100
G.	Finance/Insurance/ Real Estate	127	9,301	1,038	3%	9,654,400
H.	Services	520	7,433	5,694	18%	42,321,600
	Totals	1,543	$ 9,972	31,879[3]		$345,975,600

[1] Source: Massachusetts Division of Employment Security, Employment and Wages by Area Then by Industry, 1975. S-202 file. Employment covered by Employment Security Office only.

[2] Does not add to 100% due to rounding.

[3] Covered employment only; total employment approximately 36,000.

Table A2-3
Lynn Employment by Occupation[1]

Occupations	Number of Persons in 1970	Number of Total
Professional/Tech.	4,457	
Managers	2,271	
	6,728	19%
Sales	2,256	
Clerical	7,771	
	10,027	28%
Craftsmen	5,507	
Operatives	6,800	
Transport Equipment	1,029	
Laborers	1,208	
	14,544	40%
Service	4,613	13%
Total Employment	36,129	

[1] U.S. Census, 1970.

Table A2-4
Unemployment by Occupation (To Check Constancy of Category Percentages)

	1970[1]	5/75[2] Lynn	5/75[2] CETA	9/75[2] Lynn	5/76[3]	5/76[2] Lynn	5/76[2] CETA	1/77[3]
Employment	36,129				37,750			36,800
Total Labor Force	37,730				42,395			40,309
Unemployment	1,601				4,645			3,509
Professional/ Technical/Managers	19%	8%	7%	16%		12%	12%	
Clerical/Sales	28%	19%	17%	24%		27%	21%	
Craftsmen/ Operatives/Laborers	40%	44%	50%	43%		44%	48%	
Service	13%	7%	7%	10%		9%	15%	

1 1970 Census

2 Massachusetts Division of Employment Security, Data on the Insured Unemployed, from the Lynn Office area which includes some people living outside Lynn and from the Lynn CETA (Comprehensive Employment and Training Act) Office area which includes only Lynn residents but not necessarily all the unemployed.

3 Massachusetts Division of Employment Security, Annual Averages, Cities & Towns, Mass. 1976, Census share method. Figures generated by mathematical formula based on Lynn's share of Boston SMSA employment and updated by information from SMSA employment offices. This is an estimate and not an exact accounting.

Another way to define job need is to look at unemployment. The unemployed are probably the group on whom a major emphasis should be put for job development because of the extent of the problem and its effects on the remainder of the city. Table A2-5 illustrates the unemployment problem Lynn faces. The subcategories under occupations are listed to clarify the content of the major occupational groups but are not exhaustive. The median wage/income for these occupations is extremely difficult to document. A great variety of wages are paid, even within one occupation such as medicine/health, and there is no consistent data available for the more detailed occupation breakdown. It is also important to note that providing one figure for a major occupational group such as clerical/sales can be extremely misleading without some indication of the range of incomes that create the median wage.

Looking at unemployment would seem to indicate an almost equal need for jobs in the clerical and sales occupations, and for craftsmen and operatives. Professional, technical and services are less critical and laborer's jobs, perhaps, the least important. Clearly if land use activities provide major employment in the largest unemployed categories, the opportunity for a major part of the unemployed problem to be addressed is provided--assuming employees come from the Lynn unemployed.

A third way to define job need is to look for the underemployed within the workforce--those people who have the human capacity to do higher skill level and higher paying jobs than those in which they are currently employed or for which they are trained. The underemployed are an almost invisible group. They are extremely difficult to identify except through individual contact, testing and counseling. For the purposes of comparing the employment impacts of different activities, the effect of underemployment will be assumed to be non-existent.

Table A2-5
Lynn Unemployment By Occupation (May 1976)

Occupation	Number From Lynn Office[1]	Percentage Of Total Unempl.[2]	Percentage Of Employed[2]	Number From Lynn CETA[1]	Percentage Of Total Unempl.[2]	Percentage Of Employed[2]	Rounded Median Annual Wage/Income[3]
Prof./Tech./Mgr.	720	12%	10%	420	12%	6%	$ 15,900
Engineer - 2%							13,000
Medicine/Health - 2%							9,700
Admin. Spec. - 3%							
Managers - 4%							
Clerical/Sales	1,536	27%	15%	715	21%	7%	11,700
Steno/Type/File - 9%							
Accounting - 7%							9,100
Records - 3%							
Sales - 3%							5,400 (+ commissions)
Merchandizing - 3%							14,900
Craftsmen & Kindred[4]	1,092	19%	20%	780	23%	14%	12,400
Mechanics, Repair - 3%							10,300
Machine Trades - 1%							6,000
Elec. Assemb. & Repair - 3%							6,300
Textile Fab. & Repair - 3%							5,700
Construction - 9%							7,300
Operatives[4]	1,188	21%	15%	684	20%	8%	10,700
Food Processing - .5%							12,100
Chem., Plastic, Rubber - .2%							11,700
Leather, Textile - .2%							7,800
Metal Machining - 5%							9,400
Metal Fabricating - 2%							
Elect. Assembly - 4%							10,500
Transportation - 2%							

Table A2-5
Lynn Unemployment By Occupation (May 1976) (continued)

Occupation	Number From Lynn Office[1]	Percentage of Total Unempl.[2]	Percentage Of Employed[2]	Number From Lynn CETA[1]	Percentage Of Total Unempl.[2]	Percentage Of Employed[2]	Rounded Median Annual Wage/Income[3]
Services	528	9%	11%	347	15%	7%	8,200
Food & Beverage - 3%							5,500 (+ tips)
Apparel & Furnish. - 1%							7,300
Bldg. - 2%							5,700
Laborers[4]	216	4%	20%	168	5%	15%	7,500
Farm/Fish. - 1%							
Motor Freight - 3%							4,400
Total	5,832			3,450			

[1]Source for unemployment data: Massachusetts Division of Employment Security, Data on the Insured Unemployed, May 1976, Lynn Employment Office Area (includes some persons living in communities adjacent to Lynn) and Lynn CETA Area (only Lynn residents but does not necessarily include all the unemployed).

[2]Percents are rounded.

[3]Sources: U.S. Department of Labor, Industry Manpower Characteristics for Lynn City, State of Massachusetts, 1970 Census of Population. 1970 census figures (1969 data) inflated to 1976 by the rise of the consumer price index (CPI) 1969 to 1976, CPI 1969 = 110.0, CPI 1976 = 176.1, 176.1 = 60.1% increase.

Massachusetts Division of Employment Security, A Quarterly Survey, Unfilled Job Openings: Boston Metro, October 1976.

U.S. Dept. of Labor, Bureau of Labor Statistics, Area Wage Survey Boston, Massachusetts, Metropolitan Area, August 1976.

[4]Categories computed from data listed in different categories by Massachusetts Division of Employment Security in Data on the Insured Unemployed, May 1976.

MESH WITH STATE GROWTH PROJECTIONS

In addition to Lynn's job needs, state employment projections for the next decade can add some insight into the formation of an employment strategy against which to assess activities. The state has made projections of demand for workers through 1985, both for occupations and for industries. The figures are to be used as indicators of relative magnitude and general trends rather than exact forecasts.

As is indicated in Table A2-6 "Occupational Requirements," the state has projected the clerical division to be the fastest growing group in the next decade. In addition, growth in the professional/technical/kindred division will be substantial. Demand for medical and health workers, computer specialists, accountants, and electrical and industrial technicians will be particularly strong. Service occupations will also experience increased demand. Craft workers, especially construction trades, will show some moderate gains, while operatives and farm workers will decline in numbers. Overall the growth in white-collar and service employment is expected to continue at a faster than average rate.[1]

In industry sectors, as detailed in Table A2-7, the largest gain due to industry growth will be in the service industries. "Most of the expansion will come from the medical and educational sectors which are labor intensive and little affected by labor-displacing technological advances."[2]

Business services, data processing and maintenance are also expected to grow rapidly. Manufacturing is projected to suffer the largest decreases and correspondingly will diminish in its relative share of total employment.

Jobs in transportation/communication will rise at a slower than average rate as a group, but some increase in trucking and utilities industries is expected. Wholesale and retail trade jobs are projected to increase at a faster than average rate, with retail increasing faster than wholesale. Although employment in agriculture/fisheries is projected to decline, this projection is based on a mathematical model that ignored major economic changes such as the recently implemented 200 mile territorial waters and fishing limit.[3]

CONCLUSIONS FROM THE LOOK AT STATE PROJECTIONS

The conclusions from these projections should temper the employment strategy Lynn pursues. First, jobs in the clerical/sales occupations (mostly clerical) will have the greatest impact on unemployment and at the same time are the most likely to grow in the next decade. Therefore, creating clerical jobs should still be a high priority for new development.

Craftsmen's jobs are important to reducing unemployment, even though they are not expected to grow tremendously. Construction trades jobs will result from increased building activity in the region. But it remains difficult to direct a local employment strategy to this increase. In addition, local jobs created in this sector are not necessarily filled by local craftsmen. Because of these reasons, the impact of new activities on construction employment should not be as heavily weighted in identifying an employment strategy as Lynn might do without this realization.

Third, operatives are predicted to decline in number, and this trend is already evident in the Lynn unemployment data.

Table A2-6
Occupational Requirements Within The Commonwealth of Massachusetts

All Occupations	Annual Labor Demand 1974 - 1985		
	Total Demand	Due to Growth	Due to Separation
Total, All Occupations	120,885	18,043	102,842
Professional, Technical, Kindred	20,370	4,769	15,601
Managers	10,150	1,841	8,309
Sales Workers	8,056	1,315	6,741
Clerical Workers	35,852	6,004	29,848
Crafts & Kindred Workers	9,158	2,207	6,951
Operatives	12,470	-1,535	14,005
Service Workers	22,165	3,437	18,728
Laborers, except Farm	2,757	447	2,310
Farmers & Farm Workers	-93	-442	349

Note: May not add to totals due to rounding

The total demand by occupation during the 1974-1985 span of years is the sum of the demand arising from industry growth and those needed for replacement of workers who leave the labor force because of death, retirement or other separations from the labor force. The eleven-year growth component will amount to approximately 200,000 while more than five times this number will be needed as replacements. On the average, therefore, approximately 120,900 additional workers will be required each year during the eleven-year span.

Source: Massachusetts Division of Employment Security, Employment Requirements for Massachusetts by Occupation, by Industry 1970-1985, July 1976, pp. 6.

Table A2-7
Industry Employment Trends for Massachusetts

Industry Sector	Employment		Net Change 1974-1985	
	1974	1985	Amount	Percent
Total - All Industries	2,433,841	2,623,706	189,865	7.8
Agriculture, Forestry, Fisheries	23,075	21,780	-1,295	-5.6
Mining	983	1,106	123	12.5
Construction	134,097	152,204	18,107	13.5
Manufacturing	629,209	612,113	-17,096	-2.7
Durable Goods	372,811	385,287	12,476	3.3
Nondurable Goods	256,398	226,826	-29,572	-11.5
Transportation, Communications & Public Utilities	137,716	143,219	5,503	4.0
Wholesale & Retail Trade	548,662	606,254	57,592	10.5
Finance, Insurance, Real Estate	144,324	159,915	15,591	10.8
Services	696,023	800,378	104,355	15.0
Medical	215,993	263,670	47,677	22.1
Educational	191,493	235,486	43,993	23.0
Public Administration	119,752	126,737	6,985	5.8

Both Massachusetts and the rest of the nation have experienced a shift from a goods-producing economy to a service economy. This trend is expected to continue into the mid-1980's. Nationally, employment in the service sector is projected to increase by over 30 percent, while a modest 6 percent growth rate is forecasted for the goods-producing industries. The Massachusetts economy is expected to show similar trends with the number of jobs in service industries registering a 12 percent gain as opposed to a slight decline in the goods-producing sector.

Source: Massachusetts Division of Employment Security, Employment Requirements for Massachusetts by Occupation, by Industry 1970-1985, July 1976, pp. 2.

One strategy would be to vigorously pursue limited opportunities for job development in this area in the hope of capturing employer relations and preventing further unemployment in the existing labor force. However, another strategy might be to offer training to members of this occupation in order to make them more employable in different or higher skill jobs within existing industry. This same approach could be considered for labor occupations as well, because of their projected decline.

Services and professional/technical/managerial occupations offer a dilemma. Although they are expected to expand dramatically in number, the current unemployment in them is not as high as in occupations discussed previously. One strategy might focus on developing jobs in these areas in order to employ the unemployed and to attract new residents to Lynn. The job needs of the unemployed as well as the chances for growth in these occupations suggest a concern for creating new jobs in these areas but not to the exclusion of jobs in larger unemployment categories.

In terms of industry sector growth, service industries such as education and medicine are expected to increase substantially. Although Lynn is already well represented by service industries, the strength of the growth in these areas should be used to help Lynn's employment diversification. The growth in retail trade should also be captured in new and revitalized retail centers and used to help stimulate that revitalization. Because manufacturing (nondurable goods) is expected to decline even further, the strategy of diversifying the industry mix (and therefore employment opportunity) seems wise. Durable goods manufacturing will increase somewhat and may indicate that Lynn's manufacturers, especially General Electric, will remain fairly stable in employment over the decade.

The difficulty in relying on such an observation, however, comes from reviewing recent drops in employment at General Electric. The conclusion here may be that economic development hopes should not be pinned on new manufacturing, especially in areas not already established in Lynn, but existing employers should be actively encouraged to remain in Lynn by making it easier for them to conduct their business.

Last, jobs in finance/real estate and transportation, although desirable for employment diversification, are not expected to grow tremendously. In addition, finance/real estate activity follows rather than leads other types of activities. For this reason, some priority should be placed on the sectors of primary activity, such as retail, manufacturing and services, in order to create the basic activity needed to spur later increased finance/real estate jobs.

Appendix III

UTILITY SYSTEMS

Water Supply

Lynn is blessed with a very adequate supply of fresh water for homes and industry.[1] The city draws from a 24,000 acre watershed feeding the Saugus River (to which it has year-round pumping rights) and from the Ipswich River (to which it has six month pumping rights). This water is stored in the four city reservoir/lakes in the Lynn Woods area and is partially replenished by the average of 40-45 inches of rain per year that falls in the area. The total available yield from the watershed and rivers is approximately 35 million gallons per day.

The storage reservoirs currently hold 4.25 billion gallons of water or enough to supply 11.6 million gallons per day for 365 days if no replenishing were possible. With some raising of the dam height on the reservoirs, an expansion of 25 percent to 50 percent in capacity is possible (up to six billion gallons total).

Lynn homes and industry currently use an average of 15-16 million gallons per day year-round. The use is much higher in the summer months (22-23 million gallons per day) than in the winter months (11-13 gallons per day). General Electric

[1] All information on water supply is based on conversation with Commissioner Macaione of the Department of Public Works, March 25, 1977, and the Lynn Department of Public Works Annual Report for 1975.

Company, the city's single largest user, accounts for approximately two million gallons per day alone.

To understand whether the existing water supply is likely to act as a constraint on harbor development or whether development will necessitate increases in the supply, and therefore costs to the city, the following observations are made:

1. The total available water yield is 12 million gallons per day above the peak summer demand and more than twice as great as the average daily demand.

2. The supply and replenishment rate are sufficient to easily handle an increase of as much as two million gallons per day in use even in peak summer months without need for expansion in the existing supply. A two million gallon per day increase would be adequate to supply varying types and amounts of development. Table A3-1 lists some types of land uses with accompanying water usage.

   At these rates two million gallons per day could supply 20 regional shopping centers like the Burlington Mall or the North Shore Shopping Plaza,[2] or 13 new frozen fish processing plants like Gortons of Gloucester.

3. Whether or not this excess capacity is easily available with the existing distribution system needs to be confirmed with water supply technicians. However, the commissioner of the Lynn Department of Public Works has indicated similar optimism about excess capacity, and feels the city can easily meet the water needs of whatever new uses locate in the harbor area.

[2]Philip B. Herr and Associates, Boston, Mass., Evaluating Development Impact, Prepared for the Massachusetts Department of Community Affairs, Office of Local Assistance, Local Assistance Series 3, February 1976.

Table A3-1
Water Usage

Land Use	Rough estimate, gallons per day per employee[1]
Office	15
Restaurants	10-35 (per seat)
Shopping Center	30
Apartment Housing	60 (per resident)
General Electric	155
Warehousing	40
Printing	300
Frozen Fish Processing	250
Fresh Fish Processing	700 (most of this is salt water in Gloucester)
Chemicals manufacturing	2,000
Typical manufacturing	40-300
Offshore oil support base	8,000-19,000 (per base)
Paper manufacturing	21,000

[1]Philip B. Herr and Associates, Boston, Mass., Evaluating Development Impact, Prepared for the Massachusetts Department of Community Affairs, Office of Local Assistance, Local Assistance Series 3, February 1976; DeChiara and Koppelman, Planning Design Criteria, New York: Van Nostrand Reinhold Inc., 1969, pp. 307; and Urban Land Institute, Industrial Development Handbook, Washington, D.C., pp. 120.

Table A3-2
Gloucester Fish Processing Water Usage[1]

Industry	Number of Employees	Water Use in Gal./day	Waste Water in Gal./day
Gortons (frozen products)	550	143,000	132,000
Seafood Kitchen (frozen products)	170	32,000	27,000
Ocean Crest Seafood (fresh fish year round)	60	41,000 salt 600 fresh	41,000
Litman Marine (fish meal year round)	32	110,000 fresh 67,000 salt	29,000 150,000 cooling

[1]Whitman and Howard, Industrial Waste Survey, Fish Processing Industry, Gloucester, Massachusetts, March 1977.

Sewerage System

The sewerage system currently combines both sanitary wastes and storm runoff, although some parts of the city have separated systems. The sewage flows to the city outfall sewer pumping station on the harbor and is currently pumped without any treatment except screening 3.5 miles to deep water (approximately 35 feet deep) in the Broad Sound area of Massachusetts Bay 1.5 miles southeast of Bass Point, Nahant through a 60 inch line. Lynn accepts and is paid for pumping some of the Saugus sewage with its own. The average flow is 18.6 million gallons per day through the pumping station with peak flows of 95.6 million gallons per day (38.2 million gallons of sanitary plus 57.4 million gallons of storm runoff). Because of the flow time (during and after large storms, etc.), the remainder of the occasional peak flow (25.6 million gallons per day) must be discharged at overflow points directly into the harbor. The main overflow outlet is at the bulkhead line closest to the pumping station, although there are other overflow points into the harbor and the Saugus River.

Revere and Nahant have alleged that Lynn's pumping of raw sewage has helped decrease the quality of beach and shoreline, and overflows into the harbor have caused the Commonwealth to declare shellfish in the harbor unsuited for commercial use although local residents sometimes still gather them. As a result of these problems, the U.S. Environmental Protection Agency has put pressure on the city to install a treatment system. Other federal funds (i.e. from the Economic Development Agency) are also being tied to the city's starting of such a facility.

Therefore, a new primary and secondary treatment facility is currently being planned. It is being designed to handle the projected requirements up to the year 2020 and will handle sewage from Lynn, Saugus and Nahant. As currently planned, it will handle an average flow of 25.8 million gallons per day and a peak flow of 107 million gallons per day. Of this peak flow, 75 million gallons will receive primary and secondary treatment and be pumped to deep water, while 32 million gallons will receive primary treatment and chlorination only, and be discharged into the harbor. This facility should considerably increase water quality in the harbor.

The timetable for this new facility, as indicated by the consultant,[3] will be:

June 1, 1977	-	expected EPA 2nd phase design grant award
January 1, 1979	-	completion of engineering, drawings and approvals
April 1, 1979	-	completion of bidding and construction contract signing
September 1, 1981	-	completion of construction

These times indicate approximately two years until construction begins, a costly length of time if other federal funds are held up until that date.

In addition to this facility, the city plans to further study earlier recommendations of consultants[4] for increased separation of sanitary and storm drainage, storage during peak flows for pumping to deep water at lower flow times and minor treatment at some overflows into the Saugus River.

[3]Conversation with Mr. Stan Reich, VTN Consolidated, Consulting Engineers, Boston, Mass., March 25, 1977.

[4]Metcalf and Eddy, Consulting Engineers, Boston, Mass. 1970-1971 report.

Street System

The street system affects the way harbor development links or isolates the harbor from the rest of the Lynn community partially with its ability to accommodate increased traffic. Lynn originally developed in part as a link in the overland connection between the maritime centers of Salem and Boston and not primarily around its shallow harbor. Because the focus of activity did not occur on the waterfront, few streets ran toward it, although some ran along its edge. Even when shipping in the harbor increased, serving shoe manufacturing on the waterfront, few streets connected this activity deeper into the community. The construction of the Lynnway and accompanying harbor filling further isolated the water's edge from the community with traffic, median strips and uses that feed off the through traffic of the Lynnway rather than traffic from the water's edge inland.

This physical isolation of the harbor from the rest of the city began the process of emotional isolation from the harbor that has endured to the present. Today this manmade barrier to the water's edge is crossed visually only from the raised residential areas along Tudor Street and Newhall Street on Sagamore Hill, and at two brief points where the Lynnway touches the harbor on its north end and physically at the public landing on Blossom Street. Blossom Street was an excellent choice for a public landing, a street that, except for the Lynnway median strip, reaches back into the community to the common, a potentially strong linkage.

Traffic capacities are dependent on the street network around the harbor which consists primarily of the Lynnway. Few streets connect potential development parcels with any part of Lynn except by way of the Lynnway. This fact has potential negative effects on the ability of the Lynnway

to cope with major new traffic-generating development. The Lynnway is currently very congested at peak rush hours, congestion aggravated by the numerous entrance/exits to auto dealers and strip commercial uses. The following calculations give a ballpark estimate of the potential negative effects of new traffic.

1. Estimate of traffic generated by new development assuming all vacant land on the harbor--2,980,000 square feet (including landfill area)--were developed into some variation of the following scenario:

	Vehicle Trips per day Generated[5]		
	Low	Average	High
200 units of multifamily housing	600	1,300	1,800
75,000 gsf neighborhood & specialty retail shopping & parking	4,500	7,500	9,750
30,000 gsf office space & parking	250	325	500
6,000 gsf restaurants & parking	300	900	1,800
200 boat marina & parking	400	800	2,000
1000,000 gsf warehouse space & truck parking	450	550	700
400,000 gsf industrial park & parking	3,000	3,700	4,500
200,000 gsf manufacturing & parking	700	975	1,100
	10,200	16,050	22,150

gsf = gross square feet

[5]Philip B. Herr and Associates, Evaluating Development Impact, Prepared for the Massachusetts Department of Community Affairs, Office of Local Assistance, Local Assistance Series 3, February 1976, pp. 37-38.

2. The traffic loads (average daily traffic) on existing streets from a 1972 survey are shown below:

Lynnway (main section)	= 40,000 vehicles/day
Lynnway (north harbor section)	= 28,000 vehicles/day
Commercial Street	= 8,000 vehicles/day
Broad Street	= 15,000 vehicles/day
Market Street	= 14,000 vehicles/day

3. Percent increase in current traffic: Assume the newly generated average traffic is distributed over the above streets in the following order:

Lynnway (main)	40 percent of new traffic = 6,420 vehicles/day
Lynnway (north)	50 percent of new traffic = 8,025 vehicles/day
Commercial Street	7 percent of new traffic = 1,124 vehicles/day
Broad Street	2 percent of new traffic = 321 vehicles/day
Market Street	1 percent cf new traffic = 161 vehicles/day

This amount of new traffic represents the following percent increases in average daily traffic:

Lynnway (main)	16 percent
Lynnway (north)	29 percent
Commercial Street	14 percent
Broad Street	2 percent
Market Street	1 percent

The likelihood of all of this new traffic occurring within the next four to six years is probably low (perhaps 40 percent chance), so that the percent increases shown would happen gradually, with the intervening time available for right-of-way improvements if necessary. The north section of the Lynnway will experience the greatest impact, and a 29 percent traffic increase could have tremendous congestion effects.

4. Peak hour congestion: Current peak evening rush hour traffic on the north section of the Lynnway is (20-30 percent of average daily traffic) = 5,600-8,400 vehicles Peak hour traffic with all the new development added would be approximately 7,200-10,800 vehicles, or an increase of 29 percent, enough to lower the quality of service significantly.

Appendix IV

ACTIVITY ANALYSES

The activity analyses are divided into the five community objective criteria listed in chapter six: the use of the waterfront, the tax rate reduction, employment effects, compatibility with public access and other activities, and the market feasibility.

ACTIVITY ANALYSIS - SEAFOOD PROCESSING

Seafood is sold in several different ways: fresh, processed via freezing, canning, curing, or ground into fish meal. The industry is highly competitive due to three factors:[1]

First, given an acceptable quality of raw material, products are difficult to differentiate and difficult to add value to by processing. Value adding happens as a result of heavy brand advertising for canned products or quick distribution to the fresh retail market. Frozen processing requires more capital, equipment and labor skills than the fresh or canned industries but is still basically a simple assembly line operation that produces fish sticks or portions of uniform size and quality. Product innovations in breading and batter are possible, but these are small differentiations.

[1]Source for this information is Lee White, Harry O'Hare Jr., Clinton Bourdon, draft final report, "The Massachusetts Frozen Breaded Seafood Industry," Report From the Joint Commission on Federal Base Conversion, the Commonwealth of Massachusetts, Agribusiness Feasibility Study, 1976, pp. 19-21.

Second, new firms can easily enter the industry, because capital needs for entry are low, few technological barriers exist, branding of products is difficult and few economies of scale exist in the industry. New firms and price competition keep pressure on the marginal profit of larger processors.

Third, the domestic fish products market is not expanding rapidly. The industry has grown in total pounds of consumption, but at a rate no faster than population growth, although the frozen portion of the market has grown substantially.

1. The Use of the Waterfront

Seafood processing is often thought to be waterfront dependent because of the existing waterfront location of major firms. However, even with 10 percent of the raw input for products such as fish sticks coming from fresh fish, a waterfront location is not essential to the processing operation[2] although it is desirable.

Processors currently receive 90 percent of their input materials as frozen fish blocks by truck or boat, but all ship products overland by truck or rail. Frozen blocks and even fresh fish can be trucked from port landing point to processing plant, although most producers try to eliminate this extra handling time and expense by locating on the waterfront. In a competitive industry the cost savings of existing producer locations tend to attract new firms to the waterfront as well.

[2]Lee White, Harry O'Hare Jr., Clinton Bourdon, draft final report, "The Massachusetts Frozen Breaded Seafood Industry," Report From the Joint Commission on Federal Base Conversion, the Commonwealth of Massachusetts, Agribusiness Feasibility Study, 1976, pp. 16.

Although sizable quantities of water are used in fresh processing and canning, the water demands of the frozen product industry are not as great. Fresh processing in Gloucester uses salt water and returns all the wastes to the inner harbor. However, where sewage treatment occurs, as will be the case in Lynn, salt water cannot be used, and the need to be directly located on the waterfront is diminished.

Seafood processing, while not always dependent on a waterfront location due to the transportation mode, is dependent if one uses the definition of dependency to be industry cost savings. In addition, because processing often involves substantial use of shipping and boating for raw inputs, it is highly supportive of waterfront character and can create desirable working harbor images.

However, to the extent that the major processing activity takes place indoors and materials arrive by truck instead of water, processing can have just as negative an impact on waterfront character as does warehousing. This is an important consideration, because considerable space (often as much as 65 percent of plant or site) is used for warehousing (cooling or freezing) before or after processing. The real visual advantages to seafood processing comes in watching fishermen unload their catches.

2. Tax Rate Effects per 10,000 Square Feet

Table A4-1
Seafood Processing

Net assessible income (after deductions) = approximately 15% of annual sales[1]		
Typical established operations in Mass. do $10-20 million in annual sales[2] (Gorton's does over $80 million)		
Annual sales per sq. ft. of land used =		$35-200
Net assessible income per 10,000 sq. ft. of site =		$52,500-300,000
Market value (income capitalized)		$200,000-1,500,000
Assessed value (50% of market)		$130,000-750,000
Tax revenue ($168 per 1,000)		$22,000-126,000
Costs:		
School costs	0	
Nonschool costs	$6,000-88,000	
Loss of school aid	$2,000-12,000	
Potential costs		$8,600-100,000
Total annual fiscal gain		$13,000-26,000[3]
Divided by assessed value of community plus development (000's)		$252,731-252,793
Est. change in tax rate		$.05-.1

This would mean a drop in real taxes for a house assessed at $15,000 of about 75 cents to $1.50 per 10,000 sq. ft. of processing activity.

[1] Industry Profile No. 66014, "Quick Frozen Fish," constructed for U.S.A.I.D. by the U.S. Department of Commerce.

[2] Lee White, Harry O'Hare Jr., Clinton Bourdon, "The Massachusetts Frozen Breaded Seafood Industry," Report from the Joint Federal Commission on Federal Base Conversion, the Commonwealth of Massachusetts, Agribusiness Feasibility Study, 1976.

[3] Philip B. Herr, Evaluating Development Impact, Prepared for the Mass. DCA, Office of Local Assistance, February 1976, pp. 69-84.

3. Employment Effects

Processing is not as employment intensive as some other activities, such as office work, but is more intensive than shipping, museums, etc. Construction employment is in the median range comparatively, because a processing facility is not a highly complex or highly finished building type. The occupational mix stresses crafts/operatives and labor (generally semiskilled and unskilled labor) and therefore may have some effect on the unemployed. The greater number of skilled unemployed in Lynn, however, may diminish this benefit. The number of permanent employees is generally 25 percent of peak seasonal employment.[3]

Therefore this activity can employ lower skilled seasonally available labor such as students but may not be as successful in providing year-round employment. Wage levels for the majority of labor involved is minimum wage to four dollars per hour, although wages in union positions are as high as 5.50 dollars per hour.[4]

4. Compatibility With Other Activities

Processing will vary in its compatibility depending upon the type of operation involved. The fresh and frozen products, if processed indoors with adequate storage and removal of wastes, are not generally offensive to other industrial and commercial activities. Canning, however, because it involves cooking of the product, is usually much more odorous and can be a nuisance near residential areas. Fish waste dehydration and fish meal production plants often accompany the location of seafood processing operations. These processes often produce offensive odor difficult to contain within an industrial area. Therefore, the extent of

[3]Conversation with Susan Peterson, processing researcher at Woods Hole Oceanographic Institute, July 1976.

[4]Ibid.

the processing operations will determine the compatibility with other activities.

The heavy use of trucking in the industry also presents a possible nuisance impact. This impact makes the activity more compatible with other industrial uses than with pedestrian public access or even auto related retail and recreation activites.

Seafood processing, itself, if visible, can potentially be attractive to observers.

5. Market Feasibility[5]

The seafood market consists of two major segments, a retail sector and an institutional sector. Each of these sectors include a fresh and a processed market. The retail sector consists mainly of grocery or fish stores and the institutional sector includes restaurants, fast food franchises, school lunch programs, industrial cafeterias and the military. The frozen and canned segments of the industry are two and one-half times larger than the fresh segment, and institutional sales account for the majority of the frozen sales.

In Massachusetts, the number of processing plants has fluctuated since 1970 but has usually remained in the 107-120 range. These plants account for a substantial (near 40 percent) part of the U.S. market share. The fresh and frozen market producers have had difficulty surviving in the past decade, but the frozen breaded (fish sticks and portions) segment of the industry has had rapid and strong

[5]Lee White, Harry O'Hare Jr., Clinton Burdon, draft final report, "The Massachusetts Frozen Breaded Seafood Industry," Report From the Joint Commission on Federal Base Conversion, the Commonwealth of Massachusetts, Agribusiness Feasibility Study, 1976, pp. 22-26.

growth since 1960. Because of this growth, most plants are relatively modern (constructed within the last 15 years) and are operating below peak capacity. This excess capacity means that only with substantial industry production increases could existing plants justify expansion. Because industry reduction is tied closer to consumer demand than raw fish supply, the potential expansion of domestic fish catches due to the 200 mile limit will probably not affect the need for new plants. However, the same 200 mile limit on foreign fishing may have the effect of creating major new foreign markets in both fresh and frozen product areas. This demand is already being felt in the number of foreign firms and investors interested in U.S. plant locations.

Feasible development in Lynn is tied to parcels that have potential water access and good truck access. Although sites as small as one acre could be utilized, the sought after conglomeration of supporting facilities, such as freezing warehouses, fish meal producers, etc. makes a large site more attractive.

ACTIVITY ANALYSIS - WAREHOUSING

This storage phase of the goods flow process can occur for both durable and nondurable goods at some point between their manufacture and sale as retail goods. Produce, groceries, dry goods, chemicals/paints, building materials, furniture, sheet metal and wire, glass products, electronics products, paper, leather and other miscellaneous products are typically stored for some time in a warehouse. Durable goods such as automobiles or machinery are often of too great a bulk to be efficiently stored in warehouses and are stored in the open. Products that use warehousing are typically sensitive to weather or security.

1. The Use of the Waterfront

Warehousing can be said to be dependent on a waterfront location if the raw material or products stored there are received or distributed by water transportation. However, the products that in the past were shipped by water (especially coastal barges) such as leather, shoes, lumber, etc., are not necessarily shipped that way today because of changing technology and markets. Alternatively, one can expect that products not shipped by water today might be shipped by water in the future. The result of this uncertainty about products is that by allowing some warehousing on the waterfront offers the flexibility of use by water-shipped products in the future even though current use may be by nonwater transported products. Warehousing of waterborne products can be sensitive to proximity to pier space because of unloading by crane or conveyor system.

Warehousing is by nature an indoor activity. Except for the possible short term transfer of goods from water vessel to warehouse (or vice versa), warehousing does little to support a general boat activity atmosphere or provide operations activity that attracts public interest and observers. Warehousing of products such as agricultural produce or fish that are perishable, and therefore are received or shipped, often may aid waterfront image with the frequency of boat landings. Conversely, warehousing that is not for waterborne products has a strong negative effect on the image of the waterfront by using limited land for large visually impenetrable structures void of any water related activity.

2. Tax Rate Effects per 10,000 Square Feet

Table A4-2
Warehousing

Gross rental income approximately $1/sq.ft./ 1 year		$10,000
Net assessible income (after deductions) approximately		$ 7,000
Market value (income capitalized @ 20%)		$35,000
Assessed value (50% of market value)		$17,500
Tax revenue (@ $168.00/1,000 assessed value)		$ 2,940
Costs:		
School costs	0	
Nonschool costs	$880-2,060	
Loss of school aid	$ 280	
Total costs		$1,160-2,340
Total annual fiscal gain[1]		$ 600-1,780
Divided by assessed value of community plus development (000's)		$252,720
Est. change in tax rate		$.007-.003 or approximately ½ of 1¢

This would mean a drop in real taxes for a house assessed at $15,000 of approximately 7.5 cents per 10,000 sq.ft. of warehouse activity.

[1]Philip B. Herr, Evaluating Development Impact, Prepared for the Mass. DCA, Office of Local Assistance, February 1976, pp. 69-84.

3. Employment Effects

Warehousing is not an employment intensive use as is shown in Table A4-7. Construction employment is less intensive than many other uses because of the simplicity of the building type and lack of costly interior partitions, mechanical systems, finishes or equipment. Permanent employment is also not high on a unit basis, and the occupational mix of employees emphasizes operatives at a limited waste level, although some clerical jobs are also possible. Lynn's employment needs are affected little by warehousing.

4. Compatibility With Other Activities

Warehousing is generally compatible with manufacturing activity and is not normally noxious except for the nuisance effects of possible heavy truck traffic. Although not noxious, it is not often compatible with many retail uses, especially on a limited site because of the potential competition between truck and car for maneuvering and parking space. It is compatible with public access to the water's edge for activities such as fishing, if the use of boat landing facilities are not intensive and the building satisfies security requirements. However, the bulk of material and lack of outdoor activity, in most cases, has a very negative visual effect on image of waterfront activity.

5. Market Feasibility

The state has predicted[6] approximately a one percent rise in employment in warehousing through 1985. This use is certainly not a high growth activity but will probably remain quite stable. Feasible development will depend upon

[6]Massachusetts Division of Employment Security, Employment Requirements for Massachusetts by Occupation, by Industry 1970-1985, July 1976.

cheap land, good access, and low building costs and demand. The harbor offers some parcels that could probably be leased cheaply enough, but because these parcels are also filled land, the cost of development is uncertain. Only three parcels have good water access currently but are limited in easy use of the Lynnway for truck traffic. Lynn, at present, has very little warehousing separate from some other primary activity like manufacturing or retail. However, some potential exists to serve the North Shore area by Lynn's proximity to Logan Airport. Lynn could become a collection point for either air or water shipment of products produced in several North Shore communities.

ACTIVITY ANALYSIS - MARINA

Marinas can vary greatly in size, facilities, and services. The standard marina in the past typically included moorings, slips, fuel, ice, and limited maintenance and supplies. New marinas typically include showers and saunas, self-operated laundry, full-line ship's stores including groceries and clothing, maintenance facilities, and some combination of the following:

bar
hotel/motel
liquor store
tennis courts/swimming pool
food delivery
sailing school or club headquarters
specialty shopping
boat and equipment sales

The smaller and more basic type of marina still exists, however, and is still a viable development, independently or

often as an amenity to other development. In those increasingly less common situations where property is relatively inexpensive and minimum site preparation (e.g. dredging) is required, new small marinas can succeed; however larger scale marinas (200 slips plus) tend to be more commonly developed and efficient.[7]

1. The Use of Waterfront

Marinas are dependent upon a waterfront location for major boating operations. In addition, recreational boating increases in Lynn Harbor would have a substantial supportive effect on adjacent retail, office, or housing development. Accessory activities to marinas (parking for users and winter boat storage) are not dependent on a waterfront location, however, in most cases are a part of the same site as the main facilities. Outdoor winter boat storage can occur on the boat owner's property if: the boat is trailerable on the outdoor parking lot of the marina, and easily accessible to the take out point for large boats; or in the water at a slip where special winter ice-free systems are installed.

2. Tax Rate Effects per 10,000 square feet

Although there is some year-round income to a marina owner (storage in the winter), major income occurs for only a portion of the year. This reduced total income decreases the potential tax return to the city from marina operations. Marinas, however, can also attract an affluent group of boat owners who may directly or indirectly bring other taxable investment to the city.

[7]Introductory information from Economics Research Associates, Boston, Mass., Market Study for Downtown Gloucester, prepared for the city of Gloucester and the Gloucester Downtown Development Commission, 1976, pp. VII 9-10.

Table A4-3
Marina

Gross income from operations per 10,000 sq.ft. of land & water area		$ 5,500 - 23,000
Net assessible income (after deductions) approximately		$ 4,000 - 17,000
Market value (income capitalized)		$20,000 - 85,000
Assessed value		$10,000 - 42,000
Tax revenue ($@ $168.00/1,000)		$ 1,680 - 7,000
Costs:		
School costs	0	
Nonschool costs	$500 - 4,900	
Loss of state school aid	$160 - 660	
Total costs		$ 600 - 5,560
Total annual fiscal gain		$ 1,000 - 1,500
Divided by assessed value of community plus development (000's)		$252,719 -252,722
Est. in change in tax rate		$.004 - .006

This would mean a drop in real taxes for a house assessed at $15,000 of approximately 7.5 cents per 10,000 sq.ft. of marina.

3. Employment Effects

Marinas are not employment intensive activities. Many marinas can be adequately operated by less than a dozen employees, only half of whom may work full time. The occupational mix and seasonal nature of marina activity lead to low median wages. Marinas will not meet much of Lynn's employment needs.

4. Compatibility With Other Activities

Marinas are compatible with most activities. In particular, they complement and provide amenity for other recreational, office, housing, and research activities, although the parking demands for all these activities can potentially conflict. Marinas can fit into industrial areas as well. In industrial areas the marina might well have to provide greater user facilities of its own because of not having nearby retail shops, open space, etc., normally available to draw upon. In addition, marina boat traffic in industrial areas could easily become a potentially negative constraint on commercial boat traffic, docking, and mooring. Recreational marina locations should probably fill in edges of the harbor area where commercial traffic is not needed.

5. Market Feasibility[8]

The boating industry has shown substantial growth in the past decade (approximately five to seven percent annual growth rate during the 1967-1976 period with the greatest growth in boats 26-40 feet). Because the Commonwealth of Massachusetts registers only motorized boats, many thousands of small and medium sized sailboats and other small craft

[8]Basic information and technique from Economics Research Associates, Boston, Mass., Market Study for Downtown Gloucester, Prepared for the City of Gloucester and the Gloucester Downtown Development Commission, October 1976, pp. VII 1-13.

are not counted in these figures. Most boats are under 16 feet in length and typically do not require marina or commercial storage facilities. Boats over 16 feet constitute about 48 percent of the total.

In Massachusetts the Division of Marine and Recreational Vehicles estimates that in 1975 one in five (20 percent) state residents participated in boating. In addition, a Boating Industry Magazine survey in 1973 concluded that one participant in five (20 percent) owns a boat. The projected supply of boats by resident population lower North Shore Marketing Area are shown below.[9]

	1975	
Population[10]	182,817	
Number of participants in boating	36,563	
Residents' boats in marketing area	7,313	
Participation rate in boating	20	percent
Boats per participant	20	percent

The residents' boats figure 7,313, may be a high estimate considering the lower income nature of the market communities studied. To compensate, assume only 75 percent for demand study for a total of 5,485 resident boats.

Because waiting lists and high levels of demand exist at most marina facilities in the lower North Shore, the preceding indication of demand for boat storage in Lynn suggests that major marina facilities are feasible from a market standpoint. From a physical standpoint, there are some land parcels open for development, but very little water area that can now be developed without dredging. The creation of additional land for land facilities and the dredging of portions of the harbor are the only ways the harbor area will be able to provide the physical space needed to meet market demand.

[9]Lynn, Nahant, Revere, Saugus, Swampscott, and Winthrop.

[10]Based on 1974-1975 Polk Survey for Lynn, 1975 Massachusetts state census; Office of the Secretary of State for the remaining cities.

Table A4-4
Estimate of Existing Supply of Marina Facilities:[1]

	Marinas	Yacht Clubs	Number of Slips	Number of Moorings
Lynn	2	2	213	200
Nahant	-	2	-	-
Revere	4	3	300	50
Saugus	-	1	-	-
Swampscott	-	1	-	-
Winthrop	2	3	100	-
Total	8	12	613	250
Assumed slips & moorings for 11 establishments not reporting			440	440
Total existing supply approximately			1,050	700

[1]Boating Almanac 1976. Normally only marina information on slips and moorings is given. Yacht clubs are listed but do not report numbers of slips and moorings. To compute more exactly the existing supply, a telephone survey of harbormasters and/or yacht club operators would need to be conducted. For purposes of this estimate, an average number of 40 slips and 40 moorings per yacht club will be added per facility not already counted.

Table A4-5
Demand in Market Area for Marine Facilities 1976-1985

	1976	1978	1980	1985
Number of resident boats in region (5% increase/year)	5,759	6,307	6,855	8,225
Number of boats requiring marina space (48% of resident boats)	2,764	3,027	3,290	3,948
Total storage demand (includes additional 30% of boats from inland communities)	3,590	3,935	4,277	5,132
Less estimated existing supply (moorings & slips)	1,750	1,750	1,750	1,750
Net demand for boat storage	1,840	2,185	2,527	3,382
Portion locating in Lynn (assume Lynn's share of existing facilities)	24%	24%	24%	24%
Cumulative demand for boat storage in Lynn	441	524	607	812

ACTIVITY ANALYSIS - MISCELLANEOUS RETAIL

The retail activities that are commonly attracted to waterfront locations include gift, novelty, craft, and art sales related to a tourist area; fish and meat sales related to a historical or functioning marketplace and quick access from fishing docks; and sometimes neighborhood or community convenience/comparison goods sales where a close local residential market exists or the amenity value of the waterfront can create a marketing advantage. The likelihood of attracting a new regional shopping center or of the existence of regional scale shopping is normally limited by the non-central location within the market area that a waterfront location implies.

1. The Use of the Waterfront

Retail activity is not dependent upon a waterfront location, but can enhance and support waterfront character. The types of retail activity listed above have the potential both to draw people from the land market area to the waterfront and to draw boaters or beach users to the area for a diversion from their primary recreational activity. Many other types of retail activities also establish on waterfronts, although few make the move based on their use of the waterfront amenity. The ideal situation is where the waterfront amenity itself draws people, creating an instant market for retail activity, and this total activity then further draws people to the area. The waterfront in this situation can be likened to the magnet (major) department store in a shopping center, around which smaller stores cluster, creating a whole larger than the individual parts.

Retail activity is dependent upon access. Waterfront retail uses will probably be accessible partly by pedestrian traffic but will also need parking space. The distribution of this parking space on the site should not be primarily on the water's edge and should penetrate the site as little as possible. Retail activity, to maximize its supportiveness of waterfront character, should be oriented to the water not to parking lots or access streets.

2. Tax Rate Effects per 10,000 square feet

Assessed value could be based on the rental income retail uses provided an owner or upon the actual sales volume of the retail uses themselves. Based on sales volume, assessed value can be between eight and ten percent of annual sales.

Table A4-6
Miscellaneous Retail

		Gifts and Convenience Goods	Fish/meat Sales
Median annual sales/10,000 sq. ft.[1]		$400,000 - 700,000	$800,000 - 1,800,000
Assessed value		$32,000 - 70,000	$64,000 - 180,000
Tax revenue (@ $168.00/1,000)		$5,000 - 12,000	$11,000 - 30,000
Costs:			
School costs	0		
Nonschool costs (30-70% of revenue)	$2,000 - 21,000		
Loss of school aid	$500 - 2,850		
Total costs		$2,500 - 9,000	$8,000 - 23,850
Total annual fiscal gain		$2,500 - 3,000	$3,000 - 6,000
Divided by assessed value of community plus development (000's)		$252,721 - 252,725	$252,724 - 252,736
Est. change in tax rate		$.009 - .01	$.01 - .02

This would mean a drop in real taxes for a house assessed at $15,000 of approximately 15 cents to 30 cents per 10,000 square feet of retail activity.

[1]Urban Land Institute, Dollars and Cents of Shopping Centers: 1975, Washington D.C. Information based on neighborhood and community shopping centers in New England.

3. Employment Effects

Retail activity does not provide intensive construction employment but does provide greater full time employment per unit of site used than most industrial activities. Most of the jobs provided are in the lower paying clerical/sales occupations, (6,900 dollars median annual wages), are likely to be part-time or seasonal, and are likely to be held by women. However, these jobs are likely to go to Lynn residents, because commuting distances to sales jobs tend to be short.[11] Clerical/sales jobs are a high priority in employing the unemployed and retail trade is a strong growth sector that Lynn should be trying to encourage and capture. In conclusion, retail activity will have positive employment effects.

4. Compatibility With Other Activities

Retail uses are compatible with many other activity types. The only potential nuisance effect is the extent of auto traffic generated on and around the site. The city may wish to limit this traffic to an increase of not significantly more than its present usage.

The combination of retail uses with other activities might consider the following points:

1. Public access and open spaces should be clearly defined as public and their character/use should be respected by retail activity.

2. Protected pedestrian spaces enhance pedestrian movement and comfort.

[11]Philip B. Herr and Associates, Boston, Mass., Evaluating Development Impact, Prepared for the Massachusetts Department of Community Affairs, Office of Local Assistance, Local Assistance Series 3, February 1976, pp. 129.

3. Retail activity and light industrial uses are not incompatible.

4. Commercial and recreational boat activity provide good market support for retail activity.

5. Retail image is important to the attractiveness of the area to office users and restaurants.

5. Market Feasibility

Market conclusions indicate feasible expansion of retail space in the Lynn area to the extent of 70,000-150,000 square feet annually for the next two decades. If Lynn's share of that expansion is 60 percent, and the waterfront share of Lynn's share is 30 percent, then the demand for retail space on the waterfront would be 12,000-27,000 square feet annually.

Location is of prime importance to retail stores, especially with regard to access, but also image and prestige. The character as well as the spending power of the surrounding area is of importance to the retailer making a location decision. In addition, retailers prefer to congregate and locate near competition in order to accentuate the magnet effect of a shopping area.[12]

To Lynn these concerns mean that:

1. The linking of waterfront retail to the downtown shopping area is important if they are to be supportive of each other.

[12]Sherman Maisel and Stephen Roulac, Real Estate Investment and Finance, New York: McGraw-Hill, Inc., 1976, pp. 484.

2. Because the downtown to waterfront walking distance is greater than the acceptable distance to a single comparison shopper, the total distance cannot be one single shopping district.

3. To link the downtown to the waterfront and to upgrade the character of the surrounding area, the loft building area development should also include retail activity, but all three areas should be differentiated. While the downtown area can remain a comparison shopping area, the waterfront should move toward specialty, convenience and some food retail uses.

Table A4-7
Employment Characteristics of Activity Options

Activity/Use	Construction[1] Employment (Man/yrs. 10,000 sq.ft. of bldg.) low-high	Full Time[2] Employees per 10,000 sq.ft. of site low-high	Occupational Mix in Percentage[3] Prof./ Tech./ Mgmt.	Clerical/ Sales	Crafts Operatives Labor	Service	1976[4] Median Annual Wages
Chemical Plant	5-8	24-28	21	19	58	2	$15,700
Bldg. Products (brick, glass)	5-7	3-7	15	16	67	2	5,000
Warehousing	5-6	5-20	13	29	56	4	11,300
Seafood Processing	5-8	10-20	14	16	66	4	8,800
Misc. Manufacturing	5-8	5-40	11	17	71	1	6,700
Pollution Control Mfg.	5-8	28-30	30	20	48	2	10,300
Fishing	NA	10-20[5]	13	2	75	5	13,800
Offshore Mining	NA	1-3[6]	21	8	70	1	18,000
Support Services							
Tugboat Services	NA	5-15	21	8	70	1	11,600
Boat Bldg./Services	NA	7-9	15	11	72	2	11,700
Marina	2-3	1-2	21	13	58	8	5,700
Barge/Ferry Shipping	NA	1-2	21	8	70	1	11,600
Offices (Professional)	8-17	40-70	30	69	0	1	10,100
Retail (Misc.)	5-8	20-40	21	60	18	2	6,900
Hotel/Motel	8-11	4-6	7	14	6	73	3,200 (+ tips)

(cont.)

Table A4-7
Employment Characteristics of Activity Options (cont.)

Activity/Use	Construction[1] Employment (Man/yrs. per 10,000 sq.ft. of Bldg.) low-high	Full Time[2] Employees per 10,000 sq.ft. of site low-high	Occupational Mix in Percentage Prof./ Tech./ Mgmt.	Clerical/ Sales	Crafts Operatives Labor	Service	1976[4] Median Annual Wages
Restaurant	9-14	60-120	8	4	1	87	4,000 (+ tips)
Med. to high density residential	6-10	NA	NA				NA
Public Open Space	NA	NA	NA				NA
Cinema Center	6-12	10-20	45	23	12	21	2,200 (part time)
Research Space	9-24	20-40	71	16	3	10	8,400
Museum	Similar to retail	1-5	41	22	10	27	6,000

Note: Percentages may not add due to rounding.
NA means not applicable

[1]Phillip B. Herr Assoc. Evaluating Development Impact for Massachusetts Dept. of Community Affairs, February 1976, p. 115, based on comparative magnitudes of construction costs per sq.ft., assuming 30 man-years of labor on site per million dollars of construction costs. Man-year = 2,000 hours, and hourly wages range from about $7 to $10, p. 114.

[2]Ibid., p. 116; and Boston's Industry. Boston Economic Development and Industrial Commission, March 1970, Table 3; and Industrial Development Handbook, Urban Land Institute, Washington, D.C., 1975, p. 112.

[3]Source: Massachusetts Division of Employment Security, 1970 Industry - Occupation Employment Matrix for the State of Massachusetts, July 1975.

Table A4-7
Employment Characteristics of Activity Options (cont.)

[3]Massachusetts Division of Employment Security, Occupational Profile of Manufacturing Industries in Massachusetts, 1974, Report no. 4.

Massachusetts Division of Employment Security, Occupational Profile of Wholesale and Retail Trade in Massachusetts, 1973, Report no. 3.

Massachusetts Division of Employment Security, Occupational Profile of Selected Nonmanufacturing Industries in Massachusetts, 1973, Report no. 2.

The mix of occupations within industries has probably shifted slightly since 1970, for some in the direction of professional/technical, for others toward crafts/operatives.

[4]Source: Massachusetts Division of Employment Security, Employment and Wages by Area Then by Industry 1975, S-202 file for Lynn Industries.

These figures are inflated from 1975 to 1976 by use of the rise in the consumer price index. 1975 CPI = 162.1 1976 CPI = 176.1, increase = 8.6% and rounded.

[5]Fishing and tugboat services: assume 1 boat requires approximately 5,000 sq.ft. of land and water area for loading, unloading, support and docking. Fishing: 4-8 employees per boat; tugboat services: 3-6 employees per boat.

[6]New England River Basins Commission Resource and Land Investigation Project (RALI). Draft Interim Report #1, A Methodology for the Siting of Onshore Facilities Associated with OCS Development. January 1976. Table A-1. Assuming four acres of land for storage of supplies and 1 acre of water for docking activity support, two supply boats and crew boat plus shore personnel during exploratory drilling phase only. 42 employees on 217,800 sq.ft. = 2 employees per 10,000 sq.ft. of site area.

Table A4-8
Approximate Rental Rates for Land or Space in Various Uses in Lynn[1]
(i.e., income per 1,000 sq. ft. of site area that can be used to establish potential tax return to the city)

Use	Annual Rent per 1,000 sq. ft. of Site
Manufacturing space	$2,000 - 3,000
Warehouse space	$ 500 - 1,500
Open storage, i.e. construction yard	10% of value
Garage (for heavy equipment or boat repair)	$2,500 - 3,000
Retail space (depending on location, facilities, size) (Gifts, fish market, etc.)	$2,000 - 5,000 $3,000 - 4,000
Office space (depending on amenities)	$4,000 - 6,000
Car dealership	$7,000 - 7,500
Restaurant space	$5,500 - 6,500
Marina:[2] land area (for facilities & parking, depending on facilities & amount of sales)	$ 400 - 2,000
Water area (for boat slips)	$ 150 - 300
Residential (depends on size of units, amenities, age, etc.)	$3,600 - 5,400

[1] Conversation with Lynn assessors Mr. Pike and Mr. Smith, March 1, 1977, and conversation with Mr. Ambrose of the Nester Realty Co. in Lynn, March 23, 1977. Also, Urban Land Institute, Dollars and Cents of Shopping Centers, 1975, Washington, D.C.

[2] Using a 1:2 proportion for land to water and approximately 1800-2200 sq. ft. total land and water area per slip, an average boat length of 25 ft., and an average rental of $12/lin. ft. of boat for slips and $6/lin. ft. of boat for outdoor storage in parking area. These rates currently exist in Lynn; however, rates up to $20 or $30/lin. ft. of boat for slip rental are not uncommon in some newer, full-service marinas on the East Coast.

Appendix V

PROGRAMS TO ASSIST IN FINANCING PUBLIC IMPROVEMENTS:

1. Outdoor recreation. Acquisition, development and planning grants (Dept. of the Interior Program 15.400)[1] for paths, parks, boat ramps, tennis courts, picnic areas, bike trails, area utilities, and landscaping. Fifty percent of project costs and 100 percent of relocation costs are available. Priority to urban projects of basic facilities. State agency must apply for the city.

2. Construction Grants for Wastewater Treatment Works (Environmental Protection Agency Program 66.418). Municipal sewage treatment facility costs up to 75 percent of eligible project costs.[2]

3. Grants and Loans for Public Works and Development Facilities (Economic Development Administration, Dept. of Commerce, Program 11.300).[3] Up to 50 percent of project costs (80 percent in severely depressed areas) for water and sewerage systems, access roads to industrial parks, port facilities, site improvements, etc. that will initiate and encourage long term economic growth in the economically lagging area.

4. Public Works Impact Projects (Economic Development Administration, Program 11.304).[4]

[1] U.S. Office of Management and Budget, Executive Office of the President, Catalogue of Federal Domestic Assistance, Update to the 1976 Edition, pp. 5-76.

[2] Ibid., pp. 5-76.

[3] Ibid., pp. 5-76.

[4] Ibid., pp. 5-76.

PROGRAMS TO FACILITATE PRIVATE DEVELOPMENT:

1. Local Development Corporation Financing. Small Business Administration loans are available to LDC's for small businesses.

2. Financing through tax exempt local revenue bonds (Chapter 40D). Bonds can be used for the purchase of land, buildings, machinery or equipment, the construction of new manufacturing or warehousing facilities, at the same rate of interest that a municipality is able to sell the revenue bond issue. This interest rate is usually one to three percent below commercial rates, because municipal bonds are federally tax exempt.

3. Implementation in conjunction with a public building project. Excess condemnation of land around a new public facility (such as the Blue Line station or a waterfront park) for resale to developer. Acquisition money from Community Development Revenue sharing discretionary funds.

   - Public/private joint venture. Combine public use spaces with private commercial spaces. Use public funds to pay for some part of a private project (such as the park or enclosed pedestrian walkway of a retail shopping area that can be considered permanent public space). This might make the remainder of the project a viable private development project, since the majority of the space would be revenue producing. The city in this case gets the project it needs and the amenities it requires by contributing land assembly powers and tax exempt bond financing, while the private developer contributes construction, marketing, management, and operation.

4. Incentives for new development and rehabilitation of existing structures:

   - Tax abatements or assessment agreements.
   - Granting Chapter 121A status.
   - Deferred reassessment for newly renovated buildings.

5. Massachusetts Housing Finance Agency financing for new or rehabilitated housing:

   - Owners profit limited to six percent of equity.
   - Equity required to be 10 percent of total replacement value.
   - Project must contain minimum of 25 percent low income subsidized units.

6. U.S. Economic Development Administration Business Development Assistance:

   - Long term business development loans for up to 65 percent of fixed assets acquisition (land, building, machinery, equipment, land preparation, and building rehabilitation).
   - Of remainder, 10 percent must be applicant equity and between 20-25 percent from a commercial lender.

7. U.S. Dept. of Housing and Urban Development Mortgage Insurance programs for housing (takes the risk away from the conventional lender).

   Section 207:

   - Basic multifamily rental housing insurance for moderate and middle income families - usually moderate to upper income.

- Eight or more units of detached, semi-detached, row, walkup, or elevator units.
- No income requirements for tenant occupants.

Section 220:

- Mortgage insurance for rental housing in urban renewal areas, construction, or rehabilitation.
- Mortgagors include builders, private developers, and public bodies. Loan to value ratio - 90 percent.

Section 221 (d)(3):

- Mortgage insurance for market rate rental housing for low and moderate income families.
- New construction or rehabilitation mortgagors can be non-profit, public, limited distribution entities, investor sponsors, and profit motivated mortgagors.
- No family income limits as a requirement for occupancy; may be occupied by rent supplement tenants.
- Loan to value ratio of 100 percent for non-profit and public sponsors and 90 percent for limited dividend and private mortgagors.

Section 221 (d)(4):

- Mortgage insurance for moderate income housing projects.
- Five or more units.
- New construction, repair, or rehabilitation of existing project.
- Loan to value ratio of 90 percent, 10 percent builders and sponsors profit and risk allowance.
- Eligible mortgagors include individuals, partnerships, and corporations but exclude non-profit, limited dividend, cooperative, and public mortgagors.

Section 234 (d):

- Mortgage insurance for construction or rehabilitation of condominium projects.
- Mortgagors include private profit developers and non-profit groups.
- Loan to value ratio - 90 percent.

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Lynn, once a thriving center for North Shore commerce, industry, and residence, is suffering from a combination of problems: a loss of population; a loss of jobs and a narrowing of opportunities in the jobs that remain; a shrinking economic base; a loss of retail sales; and a deterioration of physical structures.

There exists a strong community desire to find a way to halt this decline and to reestablish Lynn as a desirable place in which to live and to do business. One obvious direction for such a revitalization would be to encourage the fuller use of Lynn's natural and manmade resources. And the harbor, even in its abandoned state, is one of the most promising resources Lynn possesses.

Currently, the harbor and attendant commercial area are in states of disrepair. The harbor is not used by business or industry, and the waterfront district offers little inducement to investors. Although it is an unmistakable physical backdrop for the city, the harbor does not add to the positive public image of Lynn nor to the ambience of the nearby downtown area.

This volume formulates options to help the city redevelop and manage the harbor so it can become an asset to the community. The options take several forms. They range from the creation of a special harbor district; to the investigation of ideas for new uses, such as building a marina; to exploitation of the benefits of federal programs such as the Coastal Zone Management Plan; to the synthesis of a set of land use and development policies for future harbor growth. These options are based on an understanding of historical, regional, economic, and governmental factors, and on an analysis of present harbor characteristics. Fundamental to the study and cited throughout it are the attitudes and objectives of the Lynn community.

The final chapter lists conclusions which have been translated into a suggested work program to initiate some of the tasks necessary to begin harbor improvements. Specific suggestions, based on analyses of the collected information, are advanced and supported with specific methods to implement them.

The material presented here will be of interest to two audiences. First, to the citizens of Lynn for immediate use in current planning and development schemes; and second, to those interested in the generic problems of planning in coastal urban areas.

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